UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2021

OR

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

For the transition period from to

Commission File Number: 001-39512

Metacrine, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**47-2297384**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
3985 Sorrento Valley Blvd., Suite C San Diego, California	**92121**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (858) 369-7800

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	MTCR	The Nasdaq Global Market

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

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

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

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

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

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

The number of outstanding shares of the registrant's common stock on November 5, 2021 was 27,314,553.

Metacrine, Inc.

Table of Contents

ITEM 1. FINANCIAL STATEMENTS

Metacrine, Inc.

Unaudited Condensed Consolidated Balance Sheets
(In thousands, except par value and share amounts)

	September 30, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 17,029	$ 24,393
Short-term investments	44,699	71,783
Prepaid expenses and other current assets	3,852	5,847
Total current assets	65,580	102,023
Property and equipment, net	415	634
Operating lease right-of-use asset	1,077	1,579
Other non-current assets	438	-
Total assets	$ 67,510	$ 104,236
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 323	$ 334
Accrued liabilities	8,770	2,951
Current portion of operating lease liability	804	741
Current portion of long-term debt	459	-
Total current liabilities	10,356	4,026
Operating lease liability, net of current portion	395	1,007
Long-term debt, net of debt discount	9,106	9,372
Other long-term liabilities	531	552
Commitments and contingencies (Note 3)		
Stockholders' equity:		
Preferred stock, $0.0001 par value; authorized shares - 10,000,000 at September 30, 2021 and December 31, 2020, respectively; issued and outstanding shares - none at September 30, 2021 and December 31, 2020, respectively.	-	-
Common stock, $0.0001 par value; authorized shares – 200,000,000 at September 30, 2021 and December 31, 2020, respectively; issued shares – 26,540,753 and 26,005,934 at September 30, 2021 and December 31, 2020, respectively; outstanding shares – 26,535,218 and 25,969,442 at September 30, 2021 and December 31, 2020, respectively.	3	3
Additional paid-in-capital	216,544	210,021
Accumulated other comprehensive income	2	1
Accumulated deficit	(169,427)	(120,746)
Total stockholders' equity	47,122	89,279
Total liabilities and stockholders' equity	$ 67,510	$ 104,236

See accompanying notes to the unaudited condensed consolidated financial statements.

Metacrine, Inc.

Unaudited Condensed Consolidated Statements of Operations and Comprehensive Loss
(In thousands, except share and per share amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Operating expenses:				
Research and development	$ 14,072	$ 6,217	$ 36,297	$ 19,973
General and administrative	4,007	2,693	11,695	6,087
Total operating expenses	18,079	8,910	47,992	26,060
Loss from operations	(18,079)	(8,910)	(47,992)	(26,060)
Other income (expense):				
Interest income	22	82	85	445
Interest expense	(252)	(258)	(743)	(765)
Other income (expense)	(19)	32	(31)	(108)
Total other income (expense)	(249)	(144)	(689)	(428)
Net loss	$ (18,328)	$ (9,054)	$ (48,681)	$ (26,488)
Other comprehensive loss:				
Unrealized gain (loss) on available-for-sale securities, net	(5)	(65)	1	(27)
Comprehensive loss	$ (18,333)	$ (9,119)	$ (48,680)	$ (26,515)
Net loss per share, basic and diluted	$ (0.69)	$ (1.41)	$ (1.85)	$ (6.89)
Weighted average shares of common stock outstanding, basic and diluted	26,521,689	6,436,546	26,300,676	3,845,793

See accompanying notes to the unaudited condensed consolidated financial statements.

Metacrine, Inc.

Unaudited Condensed Consolidated Statements of Cash Flows
(In thousands)

	Nine Months Ended September 30,	
	2021	**2020**
Operating activities:		
Net loss	$ (48,681)	$ (26,488)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	227	217
Stock-based compensation	5,260	3,151
Non-cash interest expense	193	210
Amortization (accretion) of premiums/discounts on investments, net	320	(91)
Amortization of right-of-use asset	502	463
Change in fair value of warrant liability	-	75
Changes in operating assets and liabilities		
Prepaid expenses and other current assets	1,995	29
Accounts payable and accrued liabilities	5,407	(1,260)
Lease liability	(549)	(427)
Net cash used in operating activities	(35,326)	(24,121)
Investing activities:		
Purchases of property and equipment	(8)	(172)
Purchases of short-term investments	(39,176)	(7,944)
Sales and maturities of short-term investments	65,941	37,033
Net cash provided by investing activities	26,757	28,917
Financing activities:		
Proceeds from issuance of common stock from initial public offering, net of issuance costs	-	77,750
Proceeds from exercise of common stock options	1,096	69
Repurchase of unvested common stock	(1)	(2)
Deferred issuance costs	(37)	-
Proceeds from issuance of common stock from employee stock purchase plan	147	-
Net cash provided by financing activities	1,205	77,817
Net (decrease) increase in cash and cash equivalents	(7,364)	82,613
Cash and cash equivalents at beginning of period	24,393	15,668
Cash and cash equivalents at end of period	$ 17,029	$ 98,281
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 552	$ 554
Supplemental non-cash investing and financing activities:		
Conversion of convertible preferred stock to common stock	$ -	$ 122,465
Conversion of convertible preferred stock warrant to common stock warrant	$ -	$ 259
Issuance costs in accounts payable and accrued liabilities	$ 401	$ 852
Vesting of common stock	$ 20	$ 73

See accompanying notes to the unaudited condensed consolidated financial statements.

Metacrine, Inc.

Unaudited Condensed Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
For the Nine Months Ended September 30, 2021 and 2020
(In thousands, except share amounts)

	Preferred Stock		Common Stock					
	Shares	Amount	Shares	Amount	Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total stockholders' equity
Balance at December 31, 2020	—	$ —	25,969,442	$ 3	$ 210,021	$ 1	$ (120,746)	$ 89,279
Stock-based compensation	—	—	—	—	5,260	—	—	5,260
Exercise of stock options	—	—	489,179	—	1,096	—	—	1,096
Vesting of early exercised stock options	—	—	28,262	—	20	—	—	20
Issuance of common stock from employee stock purchase plan	—	—	48,335	—	147	—	—	147
Unrealized gain on investment securities	—	—	—	—	—	1	—	1
Net loss	—	—	—	—	—	—	(48,681)	(48,681)
Balance at September 30, 2021	—	$ —	26,535,218	$ 3	$ 216,544	$ 2	$ (169,427)	$ 47,122

	Convertible Preferred Stock		Common Stock					
	Shares	Amount	Shares	Amount	Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total stockholders' equity (deficit)
Balance at December 31, 2019	85,093,688	$ 122,465	2,484,848	$ —	$ 5,164	$ 41	$ (83,442)	$ (78,237)
Issuance of common stock from initial public offering, net of issuance costs	—	—	6,540,000	1	76,897	—	—	76,898
Conversion of preferred stock to common stock from completion of initial public offering	(85,093,688)	(122,465)	16,685,014	2	122,463	—	—	122,465
Conversion of convertible preferred stock warrant to common stock warrant	—	—	—	—	259	—	—	259
Stock-based compensation	—	—	—	—	3,151	—	—	3,151
Exercise of stock options	—	—	54,266	—	69	—	—	69
Vesting of early exercised stock options	—	—	145,360	—	73	—	—	73
Unrealized loss on investment securities	—	—	—	—	—	(27)	—	(27)
Net loss	—	—	—	—	—	—	(26,488)	(26,488)
Balance at September 30, 2020	-	$ -	25,909,488	$ 3	$ 208,076	$ 14	$ (109,930)	$ 98,163

See accompanying notes to the unaudited condensed consolidated financial statements.

Metacrine, Inc.

Unaudited Condensed Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
For the Three Months Ended September 30, 2021 and 2020
(In thousands, except share amounts)

	Preferred Stock		Common Stock					
	Shares	Amount	Shares	Amount	Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Total stockholders' equity
Balance at June 30, 2021	—	$ —	26,505,924	$ 3	$ 214,348	$ 7	$ (151,099)	$ 63,259
Stock-based compensation	—	—	—	—	2,154	—	—	2,154
Exercise of stock options	—	—	22,368	—	37	—	—	37
Vesting of early exercised stock options	—	—	6,926	—	5	—	—	5
Unrealized loss on investment securities	—	—	—	—	—	(5)	—	(5)
Net loss	—	—	—	—	—	—	(18,328)	(18,328)
Balance at September 30, 2021	—	$ —	26,535,218	$ 3	$ 216,544	$ 2	$ (169,427)	$ 47,122

	Convertible Preferred Stock		Common Stock					
	Shares	Amount	Shares	Amount	Additional paid-in capital	Accumulated other comprehensive income	Accumulated deficit	Total stockholders' equity (deficit)
Balance at June 30, 2020	85,093,688	$ 122,465	2,600,373	$ —	$ 6,584	$ 79	$ (100,876)	$ (94,213)
Issuance of common stock from initial public offering, net of issuance costs	—	—	6,540,000	1	76,897	—	—	76,898
Conversion of preferred stock to common stock from completion of initial public offering	(85,093,688)	(122,465)	16,685,014	2	122,463	—	—	122,465
Conversion of convertible preferred stock warrant to common stock warrant	—	—	—	—	259	—	—	259
Stock-based compensation	—	—	—	—	1,791	—	—	1,791
Exercise of stock options	—	—	35,882	—	58	—	—	58
Vesting of early exercised stock options	—	—	48,219	—	24	—	—	24
Unrealized loss on investment securities	—	—	—	—	—	(65)	—	(65)
Net loss	—	—	—	—	—	—	(9,054)	(9,054)
Balance at September 30, 2020	-	$ -	25,909,488	$ 3	$ 208,076	$ 14	$ (109,930)	$ 98,163

See accompanying notes to the unaudited condensed consolidated financial statements.

Note 1. Organization and Summary of Significant Accounting Policies

Organization

Metacrine, Inc. (the "Company") was incorporated in the state of Delaware on September 17, 2014 and is based in San Diego, California. The Company is a clinical-stage biopharmaceutical company focused on building an innovative pipeline of differentiated drugs to treat gastrointestinal and liver diseases.

Principles of Consolidation and Basis of Presentation

In May 2019, the Company established a wholly-owned Australian subsidiary, Metacrine, Pty Ltd, in order to conduct various clinical activities for its product candidates. The unaudited condensed consolidated financial statements include the accounts of the Company and Metacrine, Pty Ltd. The functional currency of both the Company and Metacrine, Pty Ltd is the U.S. dollar. Assets and liabilities that are not denominated in the functional currency are remeasured into U.S. dollars at foreign currency exchange rates in effect at the balance sheet date except for nonmonetary assets, which are remeasured at historical foreign currency exchange rates in effect at the date of transaction. Net realized and unrealized gains and losses from foreign currency transactions and remeasurement are reported in other income (expense) in the unaudited condensed consolidated statements of operations and comprehensive loss. Intercompany accounts and transactions have been eliminated in consolidation.

The Company's unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") and applicable regulations of the U.S. Securities and Exchange Commission ("SEC"). The Company's unaudited condensed consolidated financial statements should be read in conjunction with the audited financial statements included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020 filed on March 18, 2021. Certain amounts in the unaudited condensed consolidated financial statements have been reclassified to conform to their current year presentation.

Initial Public Offering

On September 18, 2020, the Company closed its initial public offering ("IPO") of 6,540,000 shares of common stock at a public offering price of $13.00 per share. The Company raised $76.9 million in net proceeds from the IPO after deducting underwriters' discounts and commissions of $6.0 million and issuance costs of $2.2 million.

Upon closing of the Company's IPO, all of the Company's outstanding preferred stock were automatically converted into 16,685,014 shares of common stock.

Liquidity and Capital Resources

From its inception through September 30, 2021, the Company has devoted substantially all its efforts to organizing and staffing, business planning, raising capital, researching, discovering and developing its pipeline in FXR, HSD17β13, and other drug targets, and general and administrative support for these operations and has funded its operations primarily with the net proceeds from the issuance of convertible preferred stock, common stock, and long-term debt. The Company has incurred net losses and negative cash flows from operations since inception and had an accumulated deficit of $169.4 million and $120.7 million as of September 30, 2021 and December 31, 2020, respectively. Management expects the Company will incur substantial operating losses for the foreseeable future in order to complete clinical trials and launch and commercialize any product candidates for which it receives regulatory approval. The Company will need to raise additional capital through a combination of equity offerings, debt financings, collaborations, and other similar arrangements. The Company's ability to raise additional capital may be adversely impacted by potential worsening of economic conditions in the United States and worldwide resulting from the COVID-19 pandemic. If the disruption persists and deepens, the Company could experience an inability to access additional capital. As of September 30, 2021, the Company had available cash, cash equivalents, and short-term investments of $61.7 million and working capital of $55.2 million to fund future operations. Management has prepared cash flow forecasts which indicate that, based on the Company's current cash resources available and working capital, the Company will have sufficient resources to fund its operations for at least one year after the date the financial statements are issued.

Use of Estimates

The preparation of the Company's unaudited condensed consolidated financial statements requires it to make estimates and assumptions that impact the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities. Significant estimates in the Company's unaudited condensed consolidated financial statements include accruals for research and development expenses and stock-based compensation. These estimates and assumptions are based on current facts, historical experience, and various other factors believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the recording of expenses that are not readily apparent from other sources. Actual results may differ materially and adversely from these estimates. To the extent there are material differences between the estimates and actual results, the Company's future results of operations will be affected.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less when purchased to be cash equivalents. Cash and cash equivalents include cash in readily available checking accounts, money market funds, and

commercial paper. The carrying amounts reported in the unaudited condensed consolidated balance sheets for cash and cash equivalents are valued at cost, which approximates fair value.

Short-Term Investments

Short-term investments primarily consist of commercial paper, corporate debt securities, and U.S. government and agency bonds. The Company has classified these investments as available-for-sale securities, as the sale of such investments may be required prior to maturity to implement management strategies, and therefore has classified all short-term investments with maturity dates beyond three months at the date of purchase as current assets in the accompanying unaudited condensed consolidated balance sheets. Any premium or discount arising at purchase is amortized and/or accreted to interest income as an adjustment to yield using the straight-line method over the life of the instrument. Short-term investments are reported at their estimated fair value. The Company reviews its short-term investments in unrealized loss positions at each reporting date to assess whether the decline in their fair value is due to credit-related factors. The credit portion of unrealized losses and any subsequent improvements are recorded in other income (expense) through an allowance account. Unrealized gains and losses that are not credit-related are included in other comprehensive (income) loss as a component of stockholders' equity until realized. Realized gains and losses are determined using the specific identification method and are included in other income (expense).

Fair Value Measurement

The Company accounts for certain assets and liabilities at their fair value. The Company uses the following fair value hierarchy to indicate the extent to which the inputs used to determine fair value are observable in the market:

- *Level 1:* Inputs are based on quoted prices for identical assets in active markets.
- *Level 2:* Inputs, other than Level 1, that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- *Level 3:* Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents, and short-term investments. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits. The Company has not experienced any losses in such accounts and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held.

Property and Equipment, Net

Property and equipment are stated at cost and depreciated on a straight-line basis over the estimated useful life of the related assets (generally three to five years). Leasehold improvements are stated at cost and amortized on a straight-line basis over the lesser of the remaining lease term or the estimated useful life of the leasehold improvements. Repairs and maintenance costs are charged to expense as incurred.

Leases

At the inception of a contractual arrangement, the Company determines whether the contract contains a lease by assessing whether there is an identified asset and whether the contract conveys the right to control the use of the identified asset in exchange for consideration over a period of time. Lease terms are determined at the commencement date by considering whether renewal options and termination options are reasonably assured of exercise. For its long-term operating leases, the Company recognizes a lease liability and a right-of-use ("ROU") asset on its unaudited condensed consolidated balance sheets and recognizes lease expense on a straight-line basis over the lease term. The lease liability is determined as the present value of future lease payments using the discount rate implicit in the lease or, if the implicit rate is not readily determinable, an estimate of the Company's incremental borrowing rate. The ROU asset is based on the lease liability, adjusted for any prepaid or deferred rent. The Company aggregates all lease and non-lease components for each class of underlying assets into a single lease component and variable charges for common area maintenance and other variable costs are recognized as expense as incurred. The Company has elected to not recognize a lease liability or ROU asset in connection with short-term operating leases and recognizes lease expense for short-term operating leases on a straight-line basis over the lease term. The Company does not have any financing leases.

Impairment of Long-Lived Assets

The Company reviews long-lived assets, such as property and equipment, for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. Fair value would be assessed using discounted cash flows or other appropriate measures of fair value. The Company did not recognize any impairment losses during the nine months ended September 30, 2021 and 2020.

Research and Development Costs

All costs of research and development are expensed in the period incurred. Research and development costs primarily consist of salaries and related expenses for personnel, stock-based compensation, external research and development costs incurred under agreements with contract research organizations, investigative sites, and consultants to conduct our preclinical, toxicology and clinical studies, laboratory supplies, costs related to compliance with regulatory requirements, costs related to manufacturing the Company's product candidates for clinical trials and preclinical studies, facilities, depreciation, and other allocated expenses. Payments made prior to the receipt of goods or services to be used in research and development are capitalized until the related goods are delivered or services performed.

The Company has entered into various research and development contracts with clinical research organizations, clinical manufacturing organizations and other companies. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and payments made in advance of performance are reflected in the accompanying unaudited condensed consolidated balance sheets as prepaid expenses and other current assets. The Company records accruals for estimated costs incurred for ongoing research and development activities. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the services, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates may be made in determining the prepaid or accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

Patent Costs

Costs related to filing and pursuing patent applications are recorded as general and administrative expenses and expensed as incurred since recoverability of such expenditures is uncertain.

Stock-Based Compensation

The Company recognizes stock-based compensation expense related to stock options, restricted stock units, and shares granted under the Company's 2020 Employee Stock Purchase Plan (the "ESPP"). Stock-based compensation expense represents the cost of the grant date fair value of the applicable awards recognized over the requisite service period of the awards (usually the vesting period) on a straight-line basis. The Company estimates the fair value of stock option grants and shares purchased under the ESPP using the Black-Scholes option pricing model. Stock-based compensation expense related to restricted stock units is determined based upon the fair market value of the Company's stock on the grant date. Stock-based compensation expense is adjusted to reflect forfeitures as they occur.

Income Taxes

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Company recognizes net deferred tax assets to the extent that the Company believes these assets are more likely than not to be realized. In making such a determination, management considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies and results of recent operations. If management determines that the Company would be able to realize its deferred tax assets in the future in excess of their net recorded amount, management would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

The Company records uncertain tax positions on the basis of a two-step process whereby (1) management determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions that meet the more-likely-than-not recognition threshold, management recognizes the largest amount of tax benefit that is more than 50 percent likely to be realized upon ultimate settlement with the related tax authority. The Company recognizes interest and penalties related to unrecognized tax benefits within income tax expense. Any accrued interest and penalties are included within the related tax liability.

Comprehensive Loss

Comprehensive loss is defined as a change in equity during a period from transactions and other events and circumstances from non-owner sources. The only component of other comprehensive loss is unrealized gains (losses) on available-for-sale securities. Comprehensive gains (losses) have been reflected in the unaudited condensed consolidated statements of operations and comprehensive loss and as a separate component in the unaudited condensed consolidated statements of convertible preferred stock and stockholders' equity (deficit) for all periods presented.

Segment Reporting

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. The Company and its chief operating decision-maker view the Company's operations and manages its business in one operating segment.

Recent Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-13, Financial Instruments — Credit Losses, to improve financial reporting by requiring timely recording of credit losses on loans and other financial instruments held by financial institutions and other organizations. The ASU requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions and reasonable and supportable forecasts. This guidance will become effective for the Company beginning January 1, 2023, with early adoption permitted. The Company early adopted ASU No. 2016-13 during the first quarter of 2021. The standard did not have a material impact on the Company's unaudited condensed consolidated financial statements.

In December 2019, the FASB issued ASU No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes. ASU No. 2019-12 simplifies the accounting for income taxes by removing certain exceptions to the general principles in ASC 740 and also improves consistent application by clarifying and amending existing guidance. The Company adopted ASU No. 2019-12 during the first quarter of 2021. The standard did not have a material impact on the Company's unaudited condensed consolidated financial statements.

Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted average number of common shares outstanding for the period, without consideration for potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss by the weighted average number of common shares and dilutive common stock equivalents outstanding for the period determined using the treasury-stock and if-converted methods. Dilutive common stock equivalents are comprised of convertible preferred stock, preferred and common stock warrants, unvested common stock subject to repurchase, and options outstanding under the Company's stock option plan.

Potentially dilutive securities not included in the calculation of diluted net loss per share because to do so would be anti-dilutive are as follows (in common stock equivalent shares):

	September 30,	
	2021	**2020**
Common stock options	3,418,224	3,332,545
Unvested restricted stock units	552,650	—
Unvested common stock	5,535	47,920
Common stock warrant	23,122	23,122
Total	3,999,531	3,403,587

Note 2. Balance Sheet Details

Prepaid expenses and other current assets consist of the following (in thousands):

	September 30, 2021	**December 31, 2020**
Prepaid research and development	$ 2,715	$ 4,473
Prepaid expenses	774	610
Other current assets	296	570
Interest receivable	67	194
Total prepaid expenses and other current assets	$ 3,852	$ 5,847

Property and equipment consist of the following (in thousands):

	September 30, 2021	December 31, 2020
Laboratory equipment	$ 1,112	$ 1,104
Computer equipment and software	215	215
Furniture and fixtures	178	178
Leasehold improvements	146	146
Property and equipment, gross	1,651	1,643
Less accumulated depreciation and amortization	(1,236)	(1,009)
Property and equipment, net	$ 415	$ 634

Depreciation expense was $0.1 million for each of the three months ended September 30, 2021 and 2020, and $0.2 million for each of the nine months ended September 30, 2021 and 2020, respectively.

Accrued liabilities consist of the following (in thousands):

	September 30, 2021	December 31, 2020
Accrued research and development	$ 5,986	$ 676
Accrued compensation	1,683	1,671
Other accrued liabilities	1,101	604
Total accrued liabilities	$ 8,770	$ 2,951

Note 3. Commitments and Contingencies

Operating Leases

The Company entered into a five-year noncancelable operating lease in June 2017 for its corporate headquarters in San Diego, California under an agreement that commenced in March 2018. Under the terms of the agreement, there is no option to extend the lease and the Company is subject to additional charges for common area maintenance and other costs. Monthly rental payments due under the lease commenced in March 2018 and escalate throughout the lease term.

Information related to the Company's operating lease is as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Operating lease expense (including variable costs of $95 and $83 during the three months ended September 30, 2021 and 2020, respectively, and $279, and $224 during the nine months ended September 30, 2021 and 2020, respectively)	$ 293	$ 277	$ 872	$ 813
Cash paid for amounts included in the measurement of lease liabilities	$ 215	$ 193	$ 640	$ 557

As of September 30, 2021 and December 31, 2020, the remaining lease term of the Company's operating lease was 18 months and 27 months, respectively. As of September 30, 2021 and December 31, 2020, the discount rate on the Company's operating lease was 8.0%.

Future minimum noncancelable operating lease payments and information related to the lease liability are as follows (in thousands):

	September 30, 2021
Remaining during 2021	$ 216
2022	876
2023	183
Total lease payments	1,275
Imputed interest	(76)
Lease liability	1,199
Less current portion of lease liability	804
Lease liability, net of current portion	$ 395

License Agreement with the Salk Institute

In November 2016, the Company and The Salk Institute for Biological Studies ("The Salk") entered into the Amended and Restated Exclusive FXR License Agreement, which was amended in February 2017 and July 2018, pursuant to which The Salk granted the Company an exclusive, worldwide license to certain FXR related intellectual property to make, use, offer for sale, import, export, and distribute products covered by such intellectual property ("FXR Licensed Products") and a non-exclusive, worldwide license to use certain technical information to research, develop, test, make, use, offer for sale, import, export and distribute FXR Licensed Products. The Company is required to use commercially reasonable efforts to achieve certain diligence milestones with respect to the FXR Licensed Products, including with respect to developing, producing and selling FXR Licensed Products. The Company is also required to pay The Salk up to $6.5 million in milestone payments upon the completion of certain clinical and regulatory milestones, certain of which payments the Company may defer under certain circumstances. The Company is also obligated to pay The Salk a low single-digit percentage royalty on net sales, with a minimum annual royalty payment due beginning with the first commercial sale of each FXR Licensed Product. The applicable minimum annual royalty payment amount depends on the number of years that have elapsed since the first commercial sale of an FXR Licensed Product and is in the hundreds-of-thousands-of-dollars range. In addition, if the Company chooses to sublicense the FXR Licensed Product to any third parties, the Company must pay to The Salk a low single-digit percentage of all sublicensing revenue. In addition, in the event of a change of control, the Company is required to pay The Salk a low single-digit percentage of any payments and consideration that it receives in consideration of the change of control. The Company has accrued $0.4 million in milestone payments based upon the achievement of certain regulatory milestones as of September 30, 2021.

Contingencies

In the event the Company becomes subject to claims or suits arising in the ordinary course of business, the Company would accrue a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

Note 4. Long-Term Debt

Long-term debt consists of the following (in thousands):

	September 30, 2021	December 31, 2020
Long-term debt	$ 10,000	$ 10,000
Unamortized debt discount	(435)	(628)
Total debt	9,565	9,372
Current portion of long-term debt	459	-
Long-term debt, net of debt discount	$ 9,106	$ 9,372

On August 27, 2019, the Company entered into a Loan and Security Agreement (the "Loan Agreement", and all amounts borrowed thereunder the "Term Loan") with a lender (the "Lender"). The Company borrowed $10.0 million under the Term Loan at the inception of the Loan Agreement. As of September 30, 2021 (prior to being amended), the remaining borrowings available under the Loan Agreement had expired.

Prior to being amended in October 2021, the Term Loan bore interest at a floating annual rate equal to the greater of (i) the prime rate used by the Lender plus 2% (5.25% at September 30, 2021 and December 31, 2020), and (ii) 7.25%. The monthly payments were interest-only until September 1, 2022. Subsequent to the interest-only period, the Term Loan would be payable in equal monthly installments of principal plus accrued and unpaid interest, through the maturity date of September 1, 2023 ("Maturity Date"). In addition, the Company is obligated to pay a final payment fee of 5.25% of the original principal amount of the Term Loan on the Maturity Date. As of September 30, 2021 and December 31, 2020, the final payment fee of $0.5 million was recorded as a long-term liability. The Company may elect to prepay all, but not less than all, of the Term Loan prior to the Maturity Date, subject to a prepayment fee of up to 3.0% of the then outstanding principal balance. After repayment, no Term Loan amounts may be borrowed again.

The Company's obligations under the Loan Agreement are secured by a security interest in substantially all of its assets, other than its intellectual property. The Loan Agreement includes customary affirmative and negative covenants and also includes standard events of default, including an event of default based on the occurrence of a material adverse event, and a default under any agreement with a third party resulting in a right of such third party to accelerate the maturity of any debt in excess of $0.3 million. The negative covenants include, among others, restrictions on the Company transferring collateral, incurring additional indebtedness, engaging in mergers or acquisitions, paying cash dividends or making other distributions, making investments, creating liens, selling assets and making any payment on subordinated debt, in each case subject to certain exceptions. Upon the occurrence and continuance of an event of default, the Lender may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement. As of September 30, 2021 and December 31, 2020, the Company was in compliance with all applicable covenants under the Loan Agreement.

In connection with the Loan Agreement, the Company issued the Lender a warrant (the "Lender Warrant") to purchase shares of the Company's Series C convertible preferred stock at an exercise price of $10.812 per share and expiring on August 27, 2029. The number of Series C convertible preferred shares issuable upon exercise of the warrant is an amount equal to (i) 2.5% of the aggregate Term Loan funded under the Loan Agreement divided by (ii) $10.812. Upon the funding of the Term Loan, the Lender Warrant was initially exercisable for 117,924 shares of Series C convertible preferred stock. The Lender Warrant was automatically converted into a warrant to purchase 23,122 shares of common stock upon completion of the Company's IPO.

The initial $0.2 million fair value of the Lender Warrant, $0.5 million final payment fee, and $0.3 million of debt issuance costs were recorded as a debt discount and are being amortized to interest expense using the effective interest method over the term of the Term Loan. For each of the three months ended September 30, 2021 and 2020, the Company recognized $0.3 million of interest expense, including $0.1 million of debt discount amortization, respectively, in connection with the Loan Agreement. For each of the nine months ended September 30, 2021 and 2020, the Company recognized $0.7 million and $0.8 million of interest expense, including $0.2 million of debt discount amortization, respectively. As of September 30, 2021 and December 31, 2020, the Company had an outstanding Term Loan of $10.0 million and accrued interest of $0.1 million, respectively.

Future minimum principal and interest payments under the Term Loan, including the final payment fee, as of September 30, 2021 are as follows (in thousands):

	September 30, 2021
Remaining in 2021	$ 185
2022	4,438
2023	6,949
Total principal and interest payments	11,572
Less interest and final payment fee	(1,572)
Long-term debt	$ 10,000

Note 5. Fair Value of Financial Instruments

The following tables summarize the Company's financial instruments measured at fair value on a recurring basis (in thousands):

		Fair Value Measurements At Reporting Date Using		
	Total	Quoted Prices in Active Markets For Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of September 30, 2021				
Assets:				
Commercial paper	$ 27,987	$ —	$ 27,987	$ —
Corporate debt securities	1,404	—	1,404	—
U.S. government and agency securities	15,308	—	15,308	—
Total assets measured at fair value	$ 44,699	$ —	$ 44,699	$ —
As of December 31, 2020				
Assets:				
Commercial paper	$ 27,136	$ —	$ 27,136	$ —
Corporate debt securities	26,506	—	26,506	—
U.S. government and agency securities	18,141	—	18,141	—
Total assets measured at fair value	$ 71,783	$ —	$ 71,783	$ —

Note 6. Short-Term Investments

The following tables summarize short-term investments (in thousands):

	As of September 30, 2021			
		Unrealized		
	Amortized Cost	Gains	Losses	Estimated Fair Value
Commercial paper	$ 27,985	$ 3	$ (1)	$ 27,987
Corporate debt securities	1,405	—	(1)	1,404
U.S. government and agency securities	15,307	2	(1)	15,308
Total short-term investments	$ 44,697	$ 5	$ (3)	$ 44,699

	As of December 31, 2020			
		Unrealized		
	Amortized Cost	Gains	Losses	Estimated Fair Value
Commercial paper	$ 27,136	$ —	$ —	$ 27,136
Corporate debt securities	26,510	—	(4)	26,506
U.S. government and agency securities	18,136	5	—	18,141
Total short-term investments	$ 71,782	$ 5	$ (4)	$ 71,783

The following table summarizes the maturities of the Company's short-term investments at September 30, 2021 (in thousands):

	Amortized Cost	Estimated Fair Value
Due in one year or less	$ 44,697	$ 44,699
Total short-term investments	$ 44,697	$ 44,699

Note 7. Stockholders' Equity

Equity Incentive Plan

In January 2015, the Company adopted the Metacrine, Inc. 2015 Equity Incentive Plan (as amended, the "2015 Plan"), which provides for the grant of incentive stock options, nonstatutory stock options, restricted stock awards, restricted stock unit awards, and stock appreciation rights to its employees, members of its board of directors, and consultants. In August 2020, the Company's Board of Directors approved the 2020 Equity Incentive Plan (the "2020 Plan"), which is the successor and continuation of the 2015 Plan. No additional awards may be granted under the 2015 Plan and all outstanding awards under the 2015 Plan remain subject to the terms of the 2015 Plan. As of September 30, 2021, there were 2,600,197 shares authorized and available for issuance under the 2020 Plan.

Recipients of incentive stock options are eligible to purchase shares of the Company's common stock at an exercise price equal to no less than the estimated fair market value of such stock on the date of grant. The maximum term of options granted under the 2015 and 2020 Plans (or collectively, the "Equity Plans") is ten years and, in general, the options issued under the Equity Plans vest over a four-year period from the vesting commencement date. The 2015 Plan allows for early exercise of stock options, which may be subject to repurchase by the Company at the lower of (i) the fair market value at the repurchase date or (ii) the original exercise price. The early exercise of stock options is not permitted under the 2020 Plan.

A summary of the Company's unvested shares and unvested stock liability is as follows (in thousands, except share amounts):

	Number of Unvested Shares	Unvested Stock Liability
Balance at December 31, 2020	36,492	$ 27
Vested shares	(28,262)	(20)
Repurchased shares	(2,695)	(1)
Balance at September 30, 2021	5,535	$ 6

Stock Options

A summary of the Company's stock option activity is as follows (in thousands, except share and per share amounts):

	Number of Outstanding Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (In Years)	Aggregate Intrinsic Value
Balance at December 31, 2020	3,136,076	$ 5.23	7.95	$ 8,963
Granted	1,000,405	$ 8.81		
Exercised	(489,179)	$ 2.24		
Cancelled	(229,078)	$ 6.56		
Balance at September 30, 2021	3,418,224	$ 6.62	8.41	$ 601
Vested and expected to vest at September 30, 2021	3,418,224	$ 6.62	8.41	$ 601
Exercisable at September 30, 2021	1,204,210	$ 4.66	7.51	$ 510

The weighted average grant date fair value per share of stock option grants for the nine months ended September 30, 2021 and 2020 was $6.45 and $8.41, respectively. The total intrinsic value of stock options exercised during the nine months ended September 30, 2021 and 2020 was $1.8 million and $0.5 million, respectively.

The assumptions used in the Black-Scholes option pricing model to determine the fair value of stock option grants were as follows:

	Nine Months Ended September 30,	
	2021	2020
Risk-free interest rate	0.6% - 1.1%	0.4% – 0.7%
Expected volatility	86.2% - 89.5%	82.4% – 94.8%
Expected term (in years)	5.5 – 6.07	5.8 – 10.0
Expected dividend yield	0%	0%

Risk-free interest rate. The risk-free interest rate is based on the U.S. Treasury yield in effect at the time of grant for zero coupon U.S. Treasury notes with maturities similar to the expected term of the awards.

Expected volatility. Since the Company recently completed its IPO and does not have sufficient trading history for its common stock, the expected volatility assumption is based on volatilities of a peer group of similar companies whose share prices are publicly available. The peer group was developed based on companies in the biotechnology industry. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Expected term. The expected term represents the period of time that options are expected to be outstanding. Because the Company does not have historical exercise behavior, it determines the expected life assumption using the simplified method, for employees, which is an average of the contractual term of the option and its vesting period. The expected term for nonemployee options is equal to the contractual term.

Expected dividend yield. The Company bases the expected dividend yield assumption on the fact that it has never paid cash dividends and has no present intention to pay cash dividends and, therefore, used an expected dividend yield of zero.

Restricted Stock Units

A summary of the Company's restricted stock units activity is as follows (in thousands, except share and per share amounts):

	Number of Outstanding Awards	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Balance at December 31, 2020	-	$ -	
Granted	579,150	$ 4.09	
Cancelled	(26,500)	$ 4.09	
Balance at September 30, 2021	552,650	$ 4.09	$ 1,896
Vested and expected to vest at September 30, 2021	552,650	$ 4.09	$ 1,896

In June 2021, the Company granted 359,100 restricted stock units to certain executives and employees that vest in full upon the achievement of a specified development milestone related to the Company's FXR program. The Company assesses the probability the development milestone will be achieved on a quarterly basis and recognizes stock-based compensation cost ratably over the requisite service period. The Company determined that achievement of the milestone was probable as of September 30, 2021.

No restricted stock units vested during the three and nine months ended September 30, 2021 and 2020.

Employee Stock Purchase Plan

In September 2020, the Company's Board of Directors and stockholders adopted and approved the 2020 Employee Stock Purchase Plan (the "ESPP"). The ESPP permits eligible employees, who elect to participate in an offering under the ESPP, to contribute up to 15% of their eligible gross compensation towards the purchase of shares of common stock. Eligible employees can purchase up to 20,000 shares of common stock on a given purchase date. The price at which stock is purchased under the ESPP is equal to 85% of the fair market value of the Company's common stock on the commencement date of each offering period or the relevant purchase date, whichever is lower. Offerings under the ESPP are approximately two years in duration and consist of four purchase periods that are approximately six months in duration. The ESPP is considered a compensatory plan as defined by the authoritative guidance for stock-based compensation. As of September 30, 2021, there were 616,724 shares of common stock available for future issuance under the ESPP.

Stock-Based Compensation Expense

Stock-based compensation expense recognized for all equity awards has been reported in the unaudited condensed consolidated statements of operations and comprehensive loss as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
General and administrative	$ 1,528	$ 1,449	$ 3,864	$ 2,312
Research and development	626	342	1,396	839
Total stock-based compensation	$ 2,154	$ 1,791	$ 5,260	$ 3,151

As of September 30, 2021, the total unrecognized stock-based compensation expense relating to outstanding stock options and restricted stock units was $16.4 million, which is expected to be recognized over a weighted average period of 2.2 years.

Common Stock Reserved For Future Issuance

Common stock reserved for future issuance consists of the following:

	September 30, 2021	December 31, 2020
Common stock options outstanding	3,418,224	3,136,076
Restricted stock units outstanding	552,650	—
Shares available for issuance under equity incentive plans	2,600,197	2,907,742
Shares available for issuance under the ESPP	616,724	405,000
Common stock warrant	23,122	23,122
Total	7,210,917	6,471,940

Note 8. 401(k) Plan

The Company maintains a defined contribution 401(k) plan available to eligible employees. Employee contributions are voluntary and are determined on an individual basis, limited to the maximum amount allowable under federal tax regulations. The Company, at its discretion, may make certain matching contributions to the 401(k) plan. As of September 30, 2021, no contributions to the 401(k) plan have been made by the Company.

Note 9. Subsequent Events

Term Loan Refinancing

On October 1, 2021, the Company entered into a Second Amendment (the “Second Amendment”) to the Loan Agreement, pursuant to which (i) the existing Term Loan was replaced and superseded by new term loan tranches under which the Company may borrow up to an aggregate principal amount of $45.0 million subject to the Company’s achievement of certain milestones, of which the first tranche of $15.0 million was borrowed as of October 1, 2021 (the “Refinancing Term Loans”), refinancing $10.0 million of the Term Loan outstanding prior to the Second Amendment, resulting in an incremental additional $5.0 million of debt, (ii) the Lenders may convert up to $3.0 million of outstanding principal of the term loans into shares of the Company’s common stock at a conversion price of $3.86 per share (the “Conversion Feature”), (iii) the interest-only period is extended initially through July 1, 2023, but may be extended further to January 1, 2024, subject to the Company’s achievement of certain milestones, and (iv) the term loans under the Loan Agreement bear interest at a floating annual rate equal to the greater of 7.75% or the prime rate then in effect plus 4.50%.

In addition, in connection with the entry into the Second Amendment, the Company also issued to the Lender a warrant to purchase an amount of shares of the Company’s common stock equal to (i) the greater of (a) $375,000 and (b) 2.5% multiplied by the aggregate original principal amount of the Refinancing Term Loans made pursuant to the Loan Agreement divided by (ii) $2.86 per share (the “Warrant Price”), with an exercise price equal to the Warrant Price (the “Lender Warrant”). The Lender Warrant is exercisable immediately and expires on October 1, 2031, provided that, under certain circumstances, the Lender Warrant may terminate and expire earlier in connection with the closing of certain acquisition transactions involving the Company. The Lender Warrant provides that the holder thereof may elect to exercise the Lender Warrant on a net “cashless” basis at any time prior to its expiration.

ATM Sales Agreement

On October 4, 2021, the Company entered into a sales agreement (the “Sales Agreement”) with SVB Leerink LLC (“SVB Leerink”) to sell shares of common stock from time to time through an “at-the-market” equity offering program (the “ATM Offering”) under which SVB Leerink will act as the Company’s agent. The Company has no obligation to sell any shares of common stock under the Sales Agreement and may at any time suspend solicitation and offers under the Sales Agreement. SVB Leerink will be entitled to compensation in an amount of up to 3% of the gross proceeds of any shares of common stock sold under the Sales Agreement. A maximum of $50.0 million of shares of common stock may be sold under the Sales Agreement. As of November 5, 2021, the Company has sold 857,819 shares of its common stock under the Sales Agreement at a weighted average price of $1.41 and raised $1.2 million in gross proceeds before deducting underwriter commissions and other offering costs.

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

You should read the following discussion and analysis of our financial condition and results of operations together with our unaudited condensed consolidated financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q and the audited financial statements and related notes and Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K for the year ended December 31, 2020. Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Quarterly Report, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. You should carefully read the "Risk Factors" section of this Quarterly Report to gain an understanding of the important factors that could cause actual results to differ materially from our forward-looking statements.

Overview

We are a clinical-stage biopharmaceutical company focused on discovering and developing differentiated therapies for patients with gastrointestinal ("GI") and liver diseases. Our most advanced program targets the farnesoid X receptor ("FXR"), which is central to modulating GI and liver diseases. Leveraging our extensive chemistry and biology expertise, we have built a proprietary library of over 2,500 FXR compounds, and have selected a novel, oral FXR candidate from a unique chemical scaffold, MET642, that has the potential to deliver improved tolerability and therapeutic outcomes.

We intend to pursue development of MET642 for the treatment of Inflammatory Bowel Disease ("IBD"), including Ulcerative Colitis ("UC") and Crohn's disease, as we believe FXR plays a key role in the disease process of IBD. FXR is highly expressed by intestinal epithelial cells and plays a key role in healthy intestinal function by maintaining the epithelial barrier, reducing bacterial translocation into the intestinal wall and regulating the innate immune response. FXR-based therapies in IBD address multiple aspects of IBD pathogenesis without the immunosuppression inherent to other advanced-line therapies. We believe an oral, once-daily therapy with an FXR agonist could be an attractive treatment option for UC patients that may prefer oral administration instead of injectable biologics that are cumbersome to administer chronically.

In preclinical animal studies with our FXR agonist product candidates, we have observed statistically significant improvements in colon histology and at levels similar to that of a mouse antibody which targets IL-12/23. The IL-12/23 pathway is the target of current approved biologic therapies. We intend to submit an investigational new drug application ("IND") in the first half of 2022 and initiate a Phase 2 proof-of concept clinical trial of MET642 for the treatment of UC in the first half 2022.

Until recently, we were also developing two of our FXR agonists, MET409 and MET642, for the treatment of non-alcoholic steatohepatitis ("NASH"), a liver disease characterized by excess liver fat, inflammation and fibrosis. While we believe these two compounds demonstrate potential for differentiated treatments in both monotherapy and combination treatment for NASH, given recent clinical outcomes combined with the significant resources required to pursue further development in NASH, we have chosen to prioritize our efforts and resources towards the development of MET642 in IBD and have discontinued future development of our FXR program in NASH.

Topline results of the recently completed Phase 2a proof-of-concept clinical trial of MET409 with empagliflozin (Jardiance®), in patients with NASH and type 2 diabetes ("T2D")

In November 2021, we reported topline results from a Phase 2a trial evaluating MET409 in combination with empagliflozin, a sodium-glucose cotransport-2 ("SGLT2") inhibitor, in patients with T2D and NASH. The Phase 2a trial was a 12-week, randomized, placebo-controlled, multi-center trial that evaluated the safety, tolerability and pharmacological activity, as measured by reductions in liver fat content with magnetic resonance imaging-derived proton density fat fraction ("MRI-PDFF"), changes in low-density lipoprotein cholesterol ("LDL-C") levels and incidence of pruritus of MET409 (50 mg) and empagliflozin (10 mg) versus individual treatments and placebo. A total of 132 patients were randomized (or approximately 33 per treatment cohort).

MET409, empagliflozin, and combination of the two agents lowered liver fat content, with mean (±SD) relative reductions of 16±45% in the MET409 cohort, 15±22% in the empagliflozin cohort, and 28±33% in the combination cohort, compared with an increase of 3±24% in the placebo arm. These results indicate an additive effect for liver fat reduction with the combination regimen. MET409 achieved greater than 30% liver fat reduction in 50% of patients (16/33), which was found to be statistically significant relative to placebo ($p<0.0001$), compared with 23% (7/33) in the empagliflozin arm, 47% (14/32) in the combination arm, and 3% (1/33) in the placebo arm.

All regimens were generally well-tolerated, with no treatment-related serious adverse events ("AEs"). Mild-moderate pruritus was reported in 0%-6% of patients across all groups. No pruritus-related treatment discontinuations occurred in any of the cohorts. MET409 treatment resulted in an on-target mean increase in LDL-C of 12%, compared with a 2% decrease in the empagliflozin arm, 9% increase in the combination arm, and no change in the placebo arm.

Interim analysis of the Phase 2a proof-of-concept clinical trial of MET642 in NASH

In October 2021, we reported the interim results from the Phase 2a clinical trial evaluating the efficacy and safety of MET642 in approximately 60 NASH patients after 16 weeks of treatment. The Phase 2a trial is a 16-week, randomized, placebo-controlled, multi-

center trial evaluating the safety, tolerability and pharmacological activity of MET642, as measured by reductions in liver fat content with MRI-PDFF, changes in liver enzymes, LDL-C levels and incidence of pruritus, at 3 mg and 6 mg dose levels.

MET642 lowered liver fat content, with mean relative reductions of 26.9±27.8% in the 3 mg cohort and 9.3±55.8% in the 6 mg cohort, compared with 7.5±21.0% in the placebo arm. Post-hoc comparative assessment of relative liver fat reduction in the interim cohort found the decrease with 3 mg to be statistically significant compared to placebo (p=0.006). MET642 achieved greater than 30% liver fat reduction in 47% of patients (8/17) in the 3 mg cohort and 35% (6/17) in the 6 mg cohort, compared with 12% (2/17) in the placebo arm. Further clarification of the impact on liver fat at the 6 mg dose will require examination of the complete trial data set.

MET642 was generally well-tolerated, with no treatment-related serious AEs. All treatment-related AEs were mild-moderate with no apparent dose relationship. Mild-moderate pruritus was reported in one patient in the 3 mg cohort and one patient in the 6 mg cohort. No pruritus-related treatment discontinuations occurred. MET642 treatment resulted in on-target mean increases in LDL-C of 5% with the 3 mg dose and 19% with the 6 mg dose, versus a decline of 10% with placebo, from baseline to week 16. We expect complete topline results from up to approximately 180 patients from this study in the first half of 2022.

We are also developing small molecule inhibitors of hydroxysteroid dehydrogenase 17b13, or HSD17β13, for the treatment of NASH. HSD17β13 is a genetically validated target for advanced liver disease.

To date, we have devoted substantially all of our resources to organizing and staffing our company, business, planning, raising capital, researching, discovering and developing our pipeline in FXR, HSD17β13, and other drug targets and general and administrative support for these operations. We do not have any products approved for sale and have not generated any product sales. We have funded our operations primarily through the private placement of convertible preferred stock, the issuance of long-term debt, and the completion of our IPO. Through September 30, 2021, we have raised gross proceeds of approximately $124.8 million from the issuance of convertible preferred stock, $10.0 million under our Loan Agreement with K2 HealthVentures, LLC (“K2”) and $85.0 million from our IPO in September 2020. As of September 30, 2021, we had cash, cash equivalents, and short-term investments of $61.7 million.

We have incurred net losses since our inception. Our net losses were $48.7 million and $26.5 million for the nine months ended September 30, 2021 and 2020, respectively. As of September 30, 2021, we had an accumulated deficit of $169.4 million. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and preclinical studies and our expenditures on other research and development activities. We expect our expenses and operating losses will increase over time as MET642 and any future product candidates advance through preclinical studies and clinical trials, and as we expand our clinical, regulatory, quality and manufacturing capabilities, incur significant commercialization expenses for marketing, sales, manufacturing and distribution, if we obtain marketing approval for any of our product candidates, and incur additional costs associated with operating as a public company.

We do not expect to generate any revenues from product sales unless and until we successfully complete development and obtain regulatory approval for one or more product candidates, which will not be for many years, if ever. Accordingly, until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our failure to raise sufficient capital or enter into such other arrangements when needed would have a negative impact on our financial condition and could force us to delay, reduce or terminate our research and development programs or other operations, or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Financial Operations Overview

Research and Development Expenses

To date, our research and development expenses have related primarily to discovery efforts and preclinical and clinical development of our product candidates. Research and development expenses are recognized as incurred and payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods or services are received.

Research and development expenses include:

- salaries, payroll taxes, employee benefits and stock-based compensation charges for those individuals involved in research and development efforts;
- external research and development expenses incurred under agreements with contract research organizations (“CROs”) investigative sites and consultants to conduct our preclinical, toxicology and clinical studies;
- costs related to manufacturing our product candidates for clinical trials and preclinical studies, including fees paid to third-party manufacturers;
- laboratory supplies;
- costs related to compliance with regulatory requirements; and
- facilities, depreciation and other allocated expenses, which include direct and allocated expenses for rent, maintenance of facilities, insurance, equipment and other supplies.

The following table summarizes our research and development expenses allocated by program for the three and nine months ended September 30, 2021 and 2020 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2021	2020	2021	2020
Third-party research and development expenses:				
FXR program	$ 10,996	$ 3,620	$ 27,323	$ 11,595
Other research programs	405	277	1,264	1,210
Total third-party research and development expenses	11,401	3,897	28,587	12,805
Unallocated expenses	2,671	2,320	7,710	7,168
Total research and development expenses	$ 14,072	$ 6,217	$ 36,297	$ 19,973

Unallocated expenses consist primarily of our internal personnel related costs, facility costs, and lab supplies.

We plan to incur research and development expenses for the foreseeable future as we continue the development of MET642 and discovery of new product candidates. We cannot determine with certainty the timing of initiation, the duration or the completion costs of current or future clinical trials and preclinical studies of our product candidates due to the inherently unpredictable nature of preclinical and clinical development. Clinical and preclinical development timelines, the probability of success and development costs can differ materially from expectations. We anticipate that we will make determinations as to which product candidates to pursue and how much funding to direct to each product candidate on an ongoing basis in response to the results of ongoing and future preclinical studies and clinical trials, regulatory developments and our ongoing assessments as to each product candidate's commercial potential. We will need to raise substantial additional capital in the future. In addition, we cannot forecast which product candidates may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

Our development costs may vary significantly based on factors such as:

- per patient trial costs;
- the number and scope of preclinical and toxicology studies;
- the number of trials required for approval;
- the number of sites included in the trials;
- the countries in which the trials are conducted;
- the length of time required to enroll eligible patients;
- the number of patients that participate in the trials;
- the number of doses that patients receive;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring requested by regulatory agencies;
- the duration of patient participation in the trials and follow-up;
- the phase of development of the product candidate; and
- the efficacy and safety profile of the product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and employee-related costs, including stock-based compensation, for personnel in executive, finance, and other administrative functions. Other significant costs include facility-related costs, legal fees relating to intellectual property and corporate matters, professional fees for accounting and consulting services, investor relations, and insurance. If any of our product candidates receive marketing approval, we anticipate that our general and administrative expenses will increase in the future to support commercialization activities.

Total Other Income (Expense)

Total other income (expense) consists primarily of interest income from our cash, cash equivalents, and short-term investments and interest expense under our loan agreement.

Results of Operations

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

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

(In Thousands)	Three Months Ended September 30, 2021	2020	Change	Nine Months Ended September 30, 2021	2020	Change
Operating expenses:						
Research and development	$ 14,072	$ 6,217	$ 7,855	$ 36,297	$ 19,973	$ 16,324
General and administrative	4,007	2,693	1,314	11,695	6,087	5,608
Total operating expenses	18,079	8,910	9,169	47,992	26,060	21,932
Loss from operations	(18,079)	(8,910)	(9,169)	(47,992)	(26,060)	(21,932)
Other income (expense):						
Interest income	22	82	(60)	85	445	(360)
Interest expense	(252)	(258)	6	(743)	(765)	22
Other income (expense)	(19)	32	(51)	(31)	(108)	77
Total other income (expense)	(249)	(144)	(105)	(689)	(428)	(261)
Net loss	$ (18,328)	$ (9,054)	$ (9,274)	$ (48,681)	$ (26,488)	$ (22,193)

Research and Development Expenses. Research and development expenses were $14.1 million and $6.2 million for the three months ended September 30, 2021 and 2020. The increase in research and development expenses of $7.9 million when comparing the three months ended September 30, 2021 and 2020 was primarily due to increases of $7.2 million in clinical trial expenses, $0.7 million in manufacturing expenses associated with our FXR program, and $0.4 million in personnel expenses, which included an increase of $0.3 million in non-cash stock-based compensation, partially offset by a decrease of $0.6 million in toxicology study expenses.

Research and development expenses were $36.3 million and $20.0 million for the nine months ended September 30, 2021 and 2020. The increase in research and development expenses of $16.3 million when comparing the nine months ended September 30, 2021 and 2020 was primarily due to increases of $17.1 million in clinical trial expenses, $0.6 million in non-cash stock-based compensation, and $0.2 million in third-party medicinal chemistry services. The increase in research and development expenses was partially offset by decreases of $0.8 million in toxicology study expenses and $0.7 million in manufacturing expenses associated with our FXR program.

General and Administrative Expenses. General and administrative expenses were $4.0 million and $2.7 million for the three months ended September 30, 2021 and 2020. The increase in general and administrative expenses of $1.3 million when comparing the three months ended September 30, 2021 and 2020 was primarily due to increases of $0.6 million in personnel costs, which included an increase of $0.1 million in non-cash stock-based compensation, and $0.6 million in consulting, professional services, and other public company related expenses.

General and administrative expenses were $11.7 million and $6.1 million for the nine months ended September 30, 2021 and 2020. The increase in general and administrative expenses of $5.6 million when comparing the nine months ended September 30, 2021 and 2020 was primarily due to increases of $2.9 million in personnel costs, which included an increase of $1.6 million in non-cash stock-based compensation, and $2.6 million in consulting, professional services, and other public company related expenses.

Liquidity and Capital Resources

We have incurred net losses and negative cash flows from operations since our inception and anticipate we will continue to incur net losses for the foreseeable future. As of September 30, 2021, we had cash, cash equivalents, and short-term investments of $61.7 million.

The following table sets forth a summary of the net cash flow activity for each of the periods indicated (in thousands):

	Nine Months Ended September 30, 2021	2020
Net cash provided by (used in):		
Operating activities	$ (35,326)	$ (24,121)
Investing activities	26,757	28,917
Financing activities	1,205	77,817
Net (decrease) increase in cash and cash equivalents	$ (7,364)	$ 82,613

Operating Activities

Net cash used in operating activities was $35.3 million and $24.1 million for the nine months ended September 30, 2021 and 2020, respectively. The net cash used in operating activities during the nine months ended September 30, 2021 was primarily due to our net loss of $48.7 million, adjusted for $6.5 million of non-cash charges and $6.9 million from changes in operating assets and liabilities. Non-cash charges for the nine months ended September 30, 2021 primarily consisted of $5.3 million of stock-based

compensation, $0.5 million of amortization on our right-of-use asset, $0.3 million of amortization of premiums/discounts on investments, and $0.4 million in other non-cash charges.

Net cash used in operating activities was $24.1 million for the nine months ended September 30, 2020 and was primarily due to our net loss of $26.5 million and $1.7 million from changes in operating assets and liabilities, adjusted for $4.0 million of non-cash charges. Non-cash charges for the nine months ended September 30, 2020 primarily consisted of $3.2 million of stock-based compensation, $0.5 million of amortization on our right-of-use asset, and $0.2 million in depreciation expense, and $0.1 million in other non-cash charges.

Investing Activities

Net cash provided by investing activities of $26.8 million for the nine months ended September 30, 2021 was due primarily to sales and maturities of short-term investments of $65.9 million, partially offset by purchases of short-term investments of $39.2 million.

Net cash provided by investing activities of $28.9 million for the nine months ended September 30, 2020 was due primarily to sales and maturities of short-term investments of $37.0 million, partially offset by purchases of short-term investments of $7.9 million and purchases of property and equipment of $0.2 million.

Financing Activities

Net cash provided by financing activities of $1.2 million for the nine months ended September 30, 2021 was due primarily to $1.1 million of proceeds from exercises of common stock options and $0.1 million of proceeds from the issuance of shares from our employee stock purchase plan.

Net cash provided by financing activities of $77.8 million for the nine months ended September 30, 2020 was due primarily to the net proceeds from the issuance of common stock from our initial public offering.

Loan Agreement

We borrowed $10.0 million from our Loan Agreement with K2 in August 2019, as amended in March 2020 and October 2021. As of September 30, 2021 (prior to being amended), the remaining borrowings available under the Loan Agreement had expired.

Prior to being amended in October 2021, the Term Loan bore interest at a floating annual rate equal to the greater of (i) the prime rate used by lender plus 2.0% (resulting in an interest rate of 5.25% at September 30, 2021 and December 31, 2020), and (ii) 7.25%. The monthly payments were interest-only until September 1, 2022. Subsequent to the interest-only period, the Term Loan would be payable in equal monthly installments of principal plus accrued and unpaid interest, through September 1, 2023, the Term Loan Maturity Date. In addition, we are obligated to pay a final payment fee of 5.25% of the original principal amount of the Term Loan at the maturity date. We may elect to prepay all, but not less than all, of the term loan prior to the maturity date, subject to a prepayment fee of up to 3.0% of the then outstanding principal balance. After repayment, no term loan amounts may be borrowed again.

Our obligations under the Loan Agreement are secured by a security interest in substantially all of our assets, other than our intellectual property. The loan agreement includes customary affirmative and negative covenants and also includes standard events of default, including an event of default based on the occurrence of a material adverse event, and a default under any agreement with a third party resulting in a right of such third party to accelerate the maturity of any debt in excess of $0.3 million. The negative covenants include, among others, restrictions on us transferring collateral, incurring additional indebtedness, engaging in mergers or acquisitions, paying cash dividends or making other distributions, making investments, creating liens, selling assets and making any payment on subordinated debt, in each case subject to certain exceptions. Upon the occurrence and continuance of an event of default, the lender may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the loan agreement. As of September 30, 2021, we were in compliance with all applicable covenants under the Loan Agreement.

On October 1, 2021, we entered into a Second Amendment (the “Second Amendment”) to the Loan Agreement, pursuant to which (i) the existing Term Loan was replaced and superseded by new term loan tranches under which we may borrow up to an aggregate principal amount of $45.0 million subject to our achievement of certain milestones, of which the first tranche of $15.0 million was borrowed as of October 1, 2021 (the “Refinancing Term Loans”), refinancing $10.0 million of the Term Loan outstanding prior to the Second Amendment, resulting in an incremental additional $5.0 million of debt, (ii) the Lenders may convert up to $3.0 million of outstanding principal of the term loans into shares of our common stock at a conversion price of $3.86 per share (the “Conversion Feature”), (iii) the interest-only period is extended initially through July 1, 2023, but may be extended further to January 1, 2024, subject to our achievement of certain milestones, and (iv) the term loans under the Loan Agreement bear interest at a floating annual rate equal to the greater of 7.75% or the prime rate then in effect plus 4.50%.

Sales Agreement

On October 4, 2021, we entered into a sales agreement (the “Sales Agreement”) with SVB Leerink LLC (“SVB Leerink”) to sell shares of common stock from time to time through an “at-the-market” equity offering program (the “ATM Offering”) under which SVB Leerink will act as our agent. We have no obligation to sell any shares of common stock under the Sales Agreement and may at any time suspend solicitation and offers under the Sales Agreement. SVB Leerink will be entitled to compensation in an amount of up to 3% of the gross proceeds of any shares of common stock sold under the Sales Agreement. A maximum of $50,000,000 of shares of common stock may be sold under the Sales Agreement. As of November 5, 2021, we have sold 857,819 shares of our common stock

under the Sales Agreement at a weighted average price of $1.41 and raised $1.2 million in gross proceeds before deducting underwriter commissions and other offering costs.

Funding Requirements

We believe that our existing cash, cash equivalents, and short-term investments will be sufficient to meet our anticipated cash requirements through at least the next 12 months. In particular, we expect our cash, cash equivalents, and short-term investments, will allow us to fund the initial partial enrollment of a Phase 2 monotherapy clinical trial of MET642 in UC. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. We have based this estimate on assumptions that may prove to be wrong, and we could expend our capital resources sooner than we expect. Additionally, the process of testing product candidates in clinical trials is costly, and the timing of progress and expenses in these trials is uncertain.

Our future capital requirements will depend on many factors, including:

- the scope, rate of progress and costs of our drug discovery, preclinical development activities, toxicology studies, laboratory testing and clinical trials for our product candidates;
- the number and scope of clinical programs we decide to pursue;
- the scope and costs of manufacturing our product candidates and commercial manufacturing activities;
- the cost, timing and outcome of regulatory review of our product candidates;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- our efforts to enhance operational systems and our ability to attract, hire and retain qualified personnel, including personnel to support the development of our product candidates;
- the costs associated with being a public company;
- the timing of any milestone and royalty payments to The Salk, or other future licensors;
- the extent to which we acquire or in-license other product candidates and technologies; and
- the cost associated with commercializing our product candidates, if they receive marketing approval.

Until such time, if ever, as we can generate substantial product revenues to support our cost structure, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, and other similar arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise funds through collaborations, or other similar arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us and/or may reduce the value of our common stock. The COVID-19 pandemic continues to rapidly evolve and has already resulted in a significant disruption of global financial markets. Our ability to raise additional capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from the pandemic. If the disruption persists and deepens, we could experience an inability to access additional capital. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our research, product development or future commercialization efforts or grant rights to develop and market our product candidates even if we would otherwise prefer to develop and market such product candidates ourselves.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our unaudited condensed consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these unaudited condensed consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our unaudited condensed consolidated financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued expenses and stock-based compensation. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 1 to our unaudited condensed consolidated financial statements appearing elsewhere in this Quarterly Report, we believe the following accounting policies and estimates to be most critical to the preparation of our unaudited condensed consolidated financial statements.

Accrued Expenses

We make estimates of our accrued research and development expenses for services performed by our vendors in connection with research and development activities for which we have not yet been invoiced. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the

level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost.

We make estimates of our accrued expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. The significant estimates in our accrued research and development expenses include the costs incurred for services performed by our vendors in connection with research and development activities for which we have not yet been invoiced.

We base our expenses related to research and development activities on our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid expense accordingly. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts actually incurred.

Stock-Based Compensation Expense

Stock-based compensation expense represents the cost of the grant date fair value of equity awards recognized over the requisite service period of the awards (usually the vesting period) on a straight-line basis. We estimate the fair value of all stock option grants using the Black-Scholes option pricing model and recognize forfeitures as they occur. Estimating the fair value of equity awards as of the grant date using valuation models, such as the Black-Scholes option pricing model, is affected by assumptions regarding a number of variables, including the fair value of the underlying common stock on the date of grant, the risk-free interest rate, the expected stock price volatility, the expected term of stock options, and the expected dividend yield. Before the closing of our IPO, we were required to estimate the fair value of the common stock underlying our stock-based awards when performing fair value calculations. Our determinations of the fair value of our common stock were made using methodologies, approaches and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide: *Valuation of Privately Held Company Equity Securities Issued as Compensation*. Since the completion of our IPO, the fair value of equity awards have been determined based upon our closing stock price on The Nasdaq Global Market on the date of grant.

Changes in the assumptions can materially affect the fair value and ultimately how much stock-based compensation expense is recognized. These inputs are subjective and generally require significant analysis and judgment to develop. See Note 7 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report for information concerning certain of the specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options granted the three and nine months ended September 30, 2021 and 2020.

Off-Balance Sheet Arrangements

During the periods presented, we did not have, nor do we currently have, any off-balance sheet arrangements as defined under SEC rules.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We are exposed to market risk related to changes in interest rates. As of September 30, 2021, our cash, cash equivalents, and short-term investments consisted of cash, money market funds, commercial paper, corporate debt securities and U.S. government and agency securities. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. However, because of the short-term nature and low risk profile of the instruments in our portfolio, a 10% change in market interest rates would not have a material impact on our financial condition and/or results of operations.

As of September 30, 2021, our outstanding long-term debt bore interest at a floating annual rate equal to the greater of (i) the prime rate used by Lender plus 2.0% (5.25% at September 30, 2021), and (ii) 7.25%. The impact of a 10% change in market interest rates would be less than $0.1 million annually and would not have a material impact on our financial condition and/or results of operations. In October 2021, such interest rate was amended to equal to the greater of (i) the prime rate then in effect plus 4.50% and (ii) 7.75%.

Foreign Currency

In May 2019, we formed a wholly-owned Australian subsidiary, Metacrine, Pty Ltd. The functional currency of Metacrine, Pty Ltd is the United States dollar. Assets and liabilities of Metacrine, Pty Ltd that are not denominated in the functional currency are remeasured into U.S. dollars at foreign currency exchange rates in effect at the reporting date except for nonmonetary assets and capital accounts, which are remeasured at historical foreign currency exchange rates in effect at the date of transaction. Expenses are generally remeasured at foreign currency exchange rates which approximate average rates in effect during each period. Net realized

and unrealized gains and losses from foreign currency transactions and remeasurement are reported in other income (expense) in the unaudited condensed consolidated statements of operations.

In addition to the activities of Metacrine, Pty Ltd, we incur expenses, including for manufacturing of clinical trial materials, outside the United States based on contractual obligations denominated in currencies other than the U.S. dollar, including Euros. At the end of each reporting period, these liabilities are 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 foreign currencies. We do not enter into foreign currency hedging transactions to mitigate our exposure to foreign currency exchange risks. Exchange rate fluctuations may adversely affect our expenses, results of operations, financial position, and cash flows. However, to date, these fluctuations have not been significant and a movement of 10% in the U.S. dollar exchange rate would not have a material effect on our results of operations.

Effects of Inflation

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe inflation has had a material effect on our results of operations during the periods presented.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation and supervision of our Chief Executive Officer and our Chief Financial Officer, have evaluated 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, or the Exchange Act) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that, as of the end of the period covered by this Quarterly Report on Form 10-Q, our disclosure controls and procedures were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

Due to a transition period established by SEC rules applicable to newly public companies, our management is not required to evaluate the effectiveness of our internal control over financial reporting until after the filing of our Annual Report on Form 10-K for the year ended December 31, 2021. As a result, this Quarterly Report on Form 10-Q does not address whether there have been any changes in our internal control over financial reporting.

PART II—OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time, we are subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, as of the date of this Quarterly Report, we do not believe we are party to any claim or litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

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 and our other filings with the Securities and Exchange Commission before making investment decisions regarding our common stock.

Summary Risk Factors

We may be unable, for many reasons, including those that are beyond our control, to implement our business strategy. In particular, risks associated with our business include:

- We will need to obtain substantial additional funding to complete the development and any commercialization of MET642 and any future product candidates. If we are unable to raise this capital when needed, we may be forced to delay, reduce or eliminate our research and development programs or other operations.
- We are an early stage biopharmaceutical company with a very limited operating history. We have incurred net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future. We have never generated any revenue from product sales and may never be profitable.
- We are highly dependent on the success of our FXR program, which consists of our only product candidate MET642, which is in the early stage of development, and we may not be able to successfully obtain regulatory or marketing approval for, or successfully commercialize, MET642 in IBD.
- MET642 is an FXR agonist, a class of drugs from which there are no approved therapies in the diseases for which we are currently pursuing clinical trials. This makes it difficult to predict the timing and costs of clinical development for these product candidates.
- We are very early in our development efforts and we have limited experience conducting clinical trials in humans.
- The development and commercialization of drug products is subject to extensive regulation, and we may not obtain regulatory approvals for MET642 in IBD, or any future product candidates.
- Any delays in the commencement or completion, or termination or suspension, of our clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.
- Some of our competitors may have ongoing clinical trials for product candidates that would treat the same indications as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. This is acutely relevant for our development of MET642 for the treatment of patients with IBD (including UC and Crohn's disease), diseases for which there are significant competition for clinical trial subjects.
- Adverse side effects or other safety risks associated with our product candidates could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon product candidates, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.
- Our business could be adversely affected by the effects of health pandemics or epidemics, including the recent COVID-19 pandemic.
- We face substantial competition, which may result in others discovering, developing or commercializing products more quickly or marketing them more successfully than us. If their product candidates are shown to be safer or more effective than ours, then our commercial opportunity will be reduced or eliminated.
- If we are unable to obtain and maintain sufficient intellectual property protection for our product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be adversely affected.
- The trading price of our common stock may be volatile and fluctuate substantially or may decline regardless of our operating performance, which could result in substantial losses.

Investing in our common stock is speculative and involves a high degree of risk. If any of the following risks occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected. This report also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of a number of factors, including the risks described below. You should consider all of the risk factors described when evaluating our business. We have marked with an asterisk (*) those risk factors that reflect changes from the similarly titled risk factors included in the Annual Report.

Risk Factors

Risks Related to Our Business and to the Discovery, Development and Regulatory Approval of MET642 and Future Product Candidates

We will need to obtain substantial additional funding to complete the development and any commercialization of MET642 and any future product candidates. If we are unable to raise this capital when needed, we may be forced to delay, reduce or eliminate our research and development programs or other operations.*

Since our inception, we have used substantial amounts of cash to fund our operations. The development of biopharmaceutical product candidates is capital intensive. As our product candidates enter and advance through preclinical studies and clinical trials, we will need substantial additional funds to expand our clinical, regulatory, quality and manufacturing capabilities. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses for marketing, sales, manufacturing and distribution. We expect to continue to incur costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. Adequate additional financing may not be available to us on favorable terms, or at all. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. If we are unable to raise sufficient capital when needed or on favorable terms, we could be forced to delay, reduce or eliminate our research and development programs, our commercialization plans or other operations and cause the price of our common stock to decline. We believe that our cash and cash equivalents at September 30, 2021, will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect. Changes beyond our control may occur that would cause us to use our available capital before that time, including changes in the progress of our drug development activities and changes in regulation of what is necessary to develop a therapy for IBD and obtain approval. Our future capital requirements will depend on many factors, including:

- the scope, rate of progress and costs of our drug discovery, preclinical development activities, laboratory testing, toxicology studies and clinical trials for our product candidates;
- the number and scope of clinical programs we decide to pursue;
- the scope and costs of manufacturing development and commercial manufacturing activities;
- the cost, timing and outcome of regulatory review of our product candidates;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- our efforts to enhance operational systems and our ability to attract, hire and retain qualified personnel, including personnel to support the development of our product candidates;
- the costs associated with being a public company;
- the timing of any milestone and royalty payments to current or future licensors;
- the extent to which we acquire or in-license other product candidates and technologies;
- the cost associated with commercializing our product candidates, if they receive marketing approval; and
- the severity, duration, and impact of the ongoing COVID-19 pandemic, which may exacerbate the magnitude of the factors discussed above.

Identifying potential product candidates and conducting preclinical studies and clinical trials is a time consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and achieve product sales. In addition, our product candidates, if approved, may not achieve commercial success.

Our commercial revenues, if any, will be derived from sales of products that we do not expect to be commercially available for sale for many years, if at all. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations, including through a combination of equity offerings, debt financing, additional borrowings under our loan agreement, collaborations and other similar arrangements. Adequate additional financing may not be available to us on acceptable terms, or at all. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. If we are unable to raise sufficient capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or other operations or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

We are an early stage biopharmaceutical company with a very limited operating history. We have incurred net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future. We have never generated any revenue from product sales and may never be profitable.*

We are an early stage biopharmaceutical company with a very limited operating history that may make it difficult to evaluate the success of our business to date and to assess our future viability. We were incorporated in 2014 and commenced operations in 2015. To date, our operations have been limited to organizing and staffing our company, business planning, raising capital, researching, discovering and developing our pipeline in FXR, HSD17β13, and other drug targets, and general and administrative support for these operations. Our only product candidate, MET642, is in early clinical development in IBD, and our other research and development programs are in the discovery stage. We have not yet demonstrated an ability to successfully complete any late stage

clinical trials and have never completed the development of any product candidate. In October 2021, we discontinued future development of our FXR program in NASH. We have never generated any revenue from product sales and have incurred net losses each year since we commenced operations. For the nine months ended September 30, 2021 and 2020, our net losses were $48.7 million and $26.5 million, respectively. As of September 30, 2021, we had an accumulated deficit of $169.4 million. We expect to incur increasing levels of operating losses over time as we execute our plan to continue our discovery, research and development activities, including the ongoing and planned clinical development of MET642, and continue to incur the additional costs of operating as a public company. We expect that it will be several years, if ever, before we have a product candidate ready for potential regulatory approval and commercialization. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' deficit and working capital.

To become and remain profitable, we must develop and eventually commercialize a product with significant market potential. This will require us to be successful in a range of challenging activities, including completing preclinical studies and clinical trials of our product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing and selling those products for which we may obtain marketing approval and satisfying any post-marketing requirements. We may never succeed in these activities and, even if we succeed in obtaining approval for and commercializing one or more of our product candidates, we may never generate revenues that are significant enough to achieve profitability. In addition, as a young business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown challenges. Furthermore, because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis and we will continue to incur substantial research and development and other expenditures to develop and market additional product candidates. Our failure to become and remain profitable would decrease the value of the company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

We are highly dependent on the success of our FXR program, which consists of our only product candidate MET642, which is in the early stage of development, and we may not be able to successfully obtain regulatory or marketing approval for, or successfully commercialize, MET642 in IBD. *

Our future success will depend almost entirely on our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize MET642 in IBD, which may never occur. We have no significant product candidates in our pipeline other than MET642. In October 2021, we discontinued future development of our FXR program in NASH. We currently generate no revenues from sales of any drugs and we may never be able to develop or commercialize a marketable drug.

Before we can market and sell a drug in the United States or foreign jurisdictions, we will need to commence and complete additional clinical trials, manage clinical, preclinical and manufacturing activities, obtain necessary regulatory approvals from the U.S. Food and Drug Administration (the "FDA") and from similar foreign regulatory agencies in other jurisdictions, obtain manufacturing supply, build a commercial organization or enter into a marketing collaboration with a third party, and in some jurisdictions, obtain reimbursement authorization, among other things. We cannot assure you that we will be able to successfully complete the necessary clinical trials and/or obtain regulatory approvals and develop sufficient commercial capabilities for MET642 or any other product candidates. We have not submitted a NDA to the FDA, or similar drug approval filings to comparable foreign authorities, for any product candidate. Further, a product candidate may not receive regulatory approval even if it is successful in clinical trials. If we do not receive regulatory approvals, our business, prospects, financial condition and results of operations will be adversely affected. Even if we obtain regulatory approvals, we may never generate significant revenues from any commercial sales of a marketable drug. If one of our product candidates is approved and we fail to successfully commercialize it, we may be unable to generate sufficient revenues to sustain and grow our business and our business, prospects, financial condition and results of operations will be adversely affected.

MET642 is an FXR agonist, a class of drugs from which there are no approved therapies in the diseases for which we are currently pursuing clinical trials. This makes it difficult to predict the timing and costs of clinical development for this product candidate.*

We have concentrated our product research and development efforts on our FXR agonists, and our future success depends on the successful development of this therapeutic approach to disease. In October 2021, we discontinued future development of our FXR program in NASH. To date, there are no FXR agonists approved for the treatment of the disease for which we are currently pursuing clinical trials. The regulatory approval process for a novel product candidate such as ours can be more expensive and take longer than for other, better known or extensively studied pharmaceutical or other product candidates. Such evolution may impact our future clinical trial designs, including trial size and approval endpoints, in ways that we cannot predict today. As we advance our product candidate, we will be required to consult with the FDA and equivalent foreign authorities and comply with applicable guidelines. The FDA and equivalent foreign authorities may require that we perform additional studies beyond those that we currently expect. As a result, our expenses could increase materially beyond what we currently anticipate, and the timing of any potential product approval may be delayed. As an example, the FDA has suggested, and we have agreed, to include scans and other blood tests with respect to our Phase 2a clinical trial of MET642 which resulted in increases to our anticipated study costs. In addition, we have not yet submitted an IND to the FDA for our planned Phase 2 proof-of concept clinical trial of MET642 for the treatment of UC, and we cannot be certain that our plans for the trial will be acceptable to the FDA or if they will require additional data or studies. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient revenue to maintain our business.

The terms of our loan agreement place restrictions on our operating and financial flexibility. If we raise additional capital through debt financing, the terms of any new debt could further restrict our operating and financial flexibility.*

In August 2019, we entered into a loan and security agreement (the "loan agreement") with K2, as amended in March 2020 and October 2021. We borrowed $10.0 million in the first tranche under the loan agreement and borrowed an additional $5.0 million in connection with the October 2021 amendment. Our obligations under the loan agreement are secured by a security interest in substantially all of our assets, other than our intellectual property. The loan agreement includes customary affirmative and negative covenants, as well as standard events of default, including an event of default based on the occurrence of a material adverse event. The negative covenants include, among others, restrictions on us transferring collateral, incurring additional indebtedness, engaging in mergers or acquisitions, paying cash dividends or making other distributions, making investments, creating liens, selling assets and making any payment on subordinated debt, in each case subject to certain exceptions. These restrictive covenants could limit our flexibility in operating our business and our ability to pursue business opportunities that we or our stockholders may consider beneficial. In addition, K2 could declare a default upon the occurrence of any event that it interprets could have material adverse effect, as defined in the loan agreement. Upon the occurrence and continuance of an event of default, K2 may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the loan agreement. Any declaration by K2 of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline. We may not have enough available cash or be able to raise additional funds through equity or debt financings to repay these outstanding obligations at the time any event of default occurs. Further, if we raise any additional capital through debt financing, the terms of such additional debt could further restrict our operating and financial flexibility.

We are very early in our development efforts and we have limited experience conducting clinical trials in humans.*

We are early in our development efforts and we have limited experience conducting clinical trials in humans and have not yet conducted a clinical trial in IBD. In October 2021, we discontinued future development of our FXR program in NASH. Because of the early stage of our development efforts, we are still in the process of determining the clinical development path forward for MET642 in IBD. To date, MET642 has only been evaluated for safety and toxicology in animals for up to 16 weeks, in completed preclinical studies, MET642 has been evaluated for safety in a 14-day Phase 1 clinical trial and in 60 patients in a 16-week Phase 2a clinical trial. The longer-term toxicity is unknown. We recently completed a nine-month non-human primate GLP toxicology study for MET642 to support longer-term clinical trials. We are conducting an independent review of preliminary findings from such study, which may result in the need for an additional long-term animal toxicology study to support future clinical trials in IBD. We expect the independent review to be completed before the end of 2021. Adverse safety and toxicology findings may emerge as we review the findings from these studies and as we conduct additional studies. The FDA may also require additional studies after their review of safety and toxicology findings. In addition, success in early clinical trials does not mean that later clinical trials will be successful, because later-stage clinical trials may be conducted in broader patient populations and involve different study designs. For instance, the results of our completed Phase 1b proof-of-concept clinical trial of MET409 in NASH patients and preliminary and interim results of our Phase 2a proof-of-concept clinical trials of MET642 in NASH may not be predictive of the results of any future clinical trial, including for other indications such as IBD. Furthermore, our future clinical trials will need to demonstrate sufficient safety and efficacy in larger patient populations for approval by regulatory authorities. Companies frequently suffer significant setbacks in advanced clinical trials, even after earlier clinical trials have shown promising results, and we cannot be certain that we will not face similar setbacks. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products. In addition, only a small percentage of drugs under development result in the submission of an NDA to the FDA and even fewer are approved for commercialization.

To date, we have had only limited interactions with the FDA regarding our plans for future MET642 clinical trials and we have not yet submitted an IND to the FDA for our planned Phase 2 proof-of concept clinical trial of MET642 for the treatment of UC. We may not learn of certain information or the amount or type of data that the FDA may require for approval of our product candidates until after we have additional interactions with the FDA, including after their review of safety and toxicology findings. In part because of our limited infrastructure, experience conducting clinical trials as a company and regulatory interactions, we cannot be certain that our clinical trials will be initiated on time, that our planned clinical trials will be completed on time, if at all, that our planned development programs would be acceptable to the FDA or other comparable foreign regulatory authorities, or that, if approval is obtained, such product candidates can be successfully commercialized.

Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on our ability to successfully complete the above activities and any other activities required for the successful development and eventual commercialization of one or more of our product candidates. The success of our product candidates will further depend on factors such as:

- completion of preclinical studies, including ongoing and future long-term toxicology studies;
- initiation of our planned Phase 2 proof-of-concept clinical trial of MET642 for the treatment of UC;
- authorization by the FDA to proceed with clinical trials under Investigational New Drug Applications or similar regulatory authorizations by comparable foreign regulatory authorities for our future clinical trials;
- successful enrollment in, and completion of, clinical trials with favorable results;
- demonstrating safety and efficacy to the satisfaction of applicable regulatory authorities;
- receipt of marketing approvals from applicable regulatory authorities;

- establishing manufacturing capabilities or arrangements with third-party manufacturers for clinical supply and, if and when approved, for commercial supply;
- establishing sales, marketing and distribution capabilities and launching commercial sales of our products, if and when approved, whether alone or in combination with others;
- acceptance of our products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining patent, trade secret and other intellectual property protection and regulatory exclusivity for our product candidates;
- maintaining a continued acceptable safety profile of any product following approval; and
- disruptions or difficulties, or other restrictions, in initiating, enrolling, conducting or completing trials due to the recent COVID-19 pandemic.

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

The development and commercialization of drug products is subject to extensive regulation, and we may not obtain regulatory approvals for MET642 in IBD, or any future product candidates.*

The clinical development, manufacturing, labeling, packaging, storage, recordkeeping, advertising, promotion, export, import, marketing and distribution and other possible activities relating to MET642 as well as any other product candidate that we may develop in the future, are subject to extensive regulation in the United States and foreign jurisdictions. Marketing approval of drug candidates in the United States requires the submission of an NDA to the FDA and we are not permitted to market any product candidate in the United States until we obtain approval from the FDA of an NDA for that product. An NDA must be supported by extensive clinical and preclinical data, as well as extensive information regarding pharmacology, chemistry, manufacturing and controls.

Regulatory approval of an NDA is not guaranteed, and the approval process is an expensive and uncertain process that may take several years. The FDA and foreign regulatory entities also have substantial discretion in the approval process. The number and types of preclinical studies and clinical trials that will be required for NDA approval varies depending on the product candidate, the disease or the condition that the product candidate is designed to treat and the regulations applicable to any particular product candidate. Despite the time and expense associated with preclinical studies and clinical trials, failure can occur at any stage. The results of preclinical and early clinical trials of our product candidates and other products with the same mechanism of action may not be predictive of the results of our clinical trials. In particular, while we have conducted certain preclinical studies of MET642 and a Phase 1 clinical trial of MET642, we do not know whether MET642 will perform in current and future clinical trials as they have performed in these prior studies, including for other indications such as IBD. For example, in preclinical animal studies with our FXR agonist product candidates, we have observed improvement in colon inflammation on a level similar to a mouse antibody which targets IL-12/23, but there is no guarantee that a similar improvement will be observed in our clinical trials.

Clinical trial failure may result from a multitude of factors including flaws in trial design, dose selection, placebo effect, patient enrollment criteria and failure to demonstrate favorable safety or efficacy traits, and failure in clinical trials can occur at any stage. Companies in the biopharmaceutical industry frequently suffer setbacks in the advancement of clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Based upon negative or inconclusive results, we may decide, or regulators may require us, to conduct additional clinical trials or preclinical studies. In addition, data obtained from clinical trials are susceptible to varying interpretations, and regulators may not interpret our data as favorably as we do, which may further delay, limit or prevent marketing approval. Furthermore, as more product candidates within a particular class of drugs proceed through clinical development to regulatory review and approval, the amount and type of clinical data that may be required by regulatory authorities may increase or change.

The FDA and similar foreign authorities could delay, limit or deny approval of a product candidate for many reasons, including because they:

- may not deem our product candidate to be adequately safe and effective, only moderately effective or have undesirable or unintended side effects, toxicities or other characteristics that preclude our obtaining marketing approval or prevent or limit commercial use;
- may not agree that the data collected from clinical trials of our product candidates are acceptable or sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere, and such authorities may impose requirements for additional preclinical studies or clinical trials;
- may determine that adverse events experienced by participants in our clinical trials represents an unacceptable level of risk;
- may determine that population studied in the clinical trial may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- may not accept clinical data from trials which are conducted at clinical facilities or in countries where the standard of care is potentially different from that of the United States;
- may disagree regarding the formulation, labeling and/or the specifications of our product candidates;
- may not approve the manufacturing processes or facilities associated with our product candidate;
- may change approval policies or adopt new regulations; or

- may not accept a submission due to, among other reasons, the content or formatting of the submission.

In the past we have used agents in combination with our product candidates for clinical trials, and we may do so again in future clinical trials. Even if any product candidate we develop were to receive marketing approval or be commercialized for use in combination with other existing therapies, we would continue to be subject to the risks that the FDA or similar regulatory authorities outside of the United States could revoke approval of the therapy used in combination with our product candidate. There is also a risk that safety, efficacy, manufacturing or supply issues could arise with the antidiabetic agent that is used in the combination therapy. This could result in our own products being removed from the market or being less successful commercially.

Generally, public concern regarding the safety of drug products could delay or limit our ability to obtain regulatory approval, result in the inclusion of unfavorable information in our labeling, or require us to undertake other activities that may entail additional costs.

If we experience delays in obtaining approval or if we fail to obtain approval of our product candidates, the commercial prospects for our product candidates may be harmed and our ability to generate revenues will be materially impaired which would adversely affect our business, prospects, financial condition and results of operations.

Any delays in the commencement or completion, or termination or suspension, of our clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.*

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must complete preclinical development and extensive clinical studies to demonstrate the safety and efficacy of the product candidates in humans. Clinical testing is expensive, time consuming and uncertain as to outcome. In addition, we may rely in part on preclinical, clinical and quality data generated by CROs and other third parties for regulatory submissions for our product candidates. While we have or will have agreements governing these third parties' services, we have limited influence over their actual performance. If these third parties do not make data available to us, or, if applicable, make regulatory submissions in a timely manner, in each case pursuant to our agreements with them, our development programs may be significantly delayed and we may need to conduct additional studies or collect additional data independently. In either case, our development costs would increase.

The FDA or comparable foreign regulatory authorities may require that we perform additional studies beyond those that we currently expect. As an example, the FDA has suggested, and we have agreed, to include scans and other blood tests with respect to our anticipated Phase 2a clinical trial of MET642 which resulted in increases to our anticipated study costs. In addition, we have not
yet submitted an IND to the FDA for our planned Phase 2 proof-of concept clinical trial of MET642 for the treatment of UC, and we cannot be certain that our plans for the trial will be acceptable to the FDA or if they will require additional data or studies. As a result, our expenses could increase materially beyond what we currently anticipate, and the timing of any potential product approval may be delayed. Any such delays in the commencement or completion of our ongoing and planned clinical trials for our product candidates could significantly affect our product development costs. We do not know whether our planned trials will begin on time or be completed on schedule, if at all. The commencement and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- the FDA or comparable foreign regulatory authorities disagreeing as to the design or implementation of our clinical studies;
- obtaining regulatory authorizations to commence a trial or reaching a consensus with regulatory authorities on trial design;
- any failure or delay in reaching an agreement with CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining approval from one or more Institutional Review Boards ("IRBs");
- IRBs refusing to approve, suspending or terminating the trial at an investigational site, precluding enrollment of additional subjects, or withdrawing their approval of the trial;
- changes to clinical trial protocol;
- clinical sites deviating from trial protocol or dropping out of a trial;
- manufacturing sufficient quantities of product candidate or obtaining sufficient quantities of combination therapies for use in clinical trials;
- subjects failing to enroll or remain in our trial at the rate we expect, or failing to return for post-treatment follow-up;
- subjects choosing an alternative treatment for the indication for which we are developing our product candidates, or participating in competing clinical trials;
- lack of adequate funding to continue the clinical trial;
- subjects experiencing severe or unexpected drug-related adverse effects;
- occurrence of serious adverse events in trials of the same class of agents conducted by other companies;
- selection of clinical end points that require prolonged periods of clinical observation or analysis of the resulting data;
- a facility manufacturing our product candidates or any of their components being ordered by the FDA or comparable foreign regulatory authorities to temporarily or permanently shut down due to violations of cGMP regulations or other applicable requirements, or infections or cross-contaminations of product candidates in the manufacturing process;
- any changes to our manufacturing process that may be necessary or desired;

- third-party clinical investigators losing the licenses or permits necessary to perform our clinical trials, not performing our clinical trials on our anticipated schedule or consistent with the clinical trial protocol Good Clinical Practices ("GCPs") or other regulatory requirements;
- third-party contractors not performing data collection or analysis in a timely or accurate manner;
- third-party contractors becoming debarred or suspended or otherwise penalized by the FDA or other government or regulatory authorities for violations of regulatory requirements, in which case we may need to find a substitute contractor, and we may not be able to use some or all of the data produced by such contractors in support of our marketing applications; or
- disruptions caused by man-made or natural disasters, or public health pandemics or epidemics or other business interruptions, including the ongoing COVID-19 pandemic.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by a Data Safety Monitoring Board for such trial or by the FDA or comparable foreign regulatory authorities. For example, in October 2021, we discontinued future development of our FXR program in NASH. IRBs, Data Safety Monitoring Boards or the FDA may impose a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or comparable foreign regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. In addition, changes in regulatory requirements and policies may occur, and we may need to amend clinical trial protocols to comply with these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical trial.

Further, conducting clinical trials in foreign countries (for example, our Phase 1 clinical trial of MET409 was conducted in the Netherlands and our Phase 1 clinical trial of MET642 was conducted in Australia) presents additional risks that may delay completion of our clinical trials. These risks include the failure of enrolled patients in foreign countries to adhere to clinical protocol as a result of differences in healthcare services or cultural customs, managing additional administrative burdens associated with foreign regulatory schemes, as well as political and economic risks relevant to such foreign countries. Moreover, certain of our scientific advisors or consultants who receive compensation in connection with such services are likely to be investigators for our future clinical trials. Under certain circumstances, we may be required to report some of these relationships to the FDA or comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authority may conclude that our financial relationships with principal investigators, some of whom we engage as consultants, have created a conflict of interest or otherwise affected interpretation of the study. The FDA or comparable foreign regulatory authority may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or comparable foreign regulatory authority, as the case may be, and may ultimately lead to the denial of marketing approval of one or more of our product candidates. If we experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to generate product revenues from any of these product candidates will be delayed. Moreover, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues.

In addition, many of the factors that cause, or lead to, termination or suspension of, or a delay in the commencement or completion of, clinical trials may also ultimately lead to the denial of regulatory approval of a product candidate. We may make formulation or manufacturing changes to our product candidates, in which case we may need to conduct additional preclinical studies to bridge our modified product candidates to earlier versions. Any delays to our clinical trials that occur as a result could shorten any period during which we may have the exclusive right to commercialize our product candidates and our competitors may be able to bring products to market before we do, and the commercial viability of our product candidates could be significantly reduced. Any of these occurrences may harm our business, financial condition and prospects significantly.

If we experience delays or difficulties in enrolling patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.*

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to identify and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or analogous regulatory authorities outside the United States. In addition, some of our competitors may have ongoing clinical trials for product candidates that would treat the same indications as our product candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. This is acutely relevant for our development of MET642 for the treatment of patients with IBD (including UC and Crohn's disease), diseases for which there are significant competition for clinical trial subjects. Patient enrollment is also affected by other factors, including:

- severity of the disease under investigation;
- invasive procedures required to obtain evidence of drug performance during the clinical trial;
- availability and efficacy of approved medications for the disease under investigation;
- eligibility criteria for the trial in question;
- perceived risks and benefits of the product candidate under study;
- efforts to facilitate timely enrollment in clinical trials;
- reluctance of physicians to encourage patient participation in clinical trials;

- the ability to monitor patients adequately during and after treatment;
- proximity and availability of clinical trial sites for prospective patients; and
- disruptions caused by man-made or natural disasters, or public health pandemics or epidemics, or other business interruptions, including the ongoing COVID-19 pandemic.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

Adverse side effects or other safety risks associated with our product candidates could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon product candidates, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.*

As is the case with pharmaceuticals generally, it is likely that there may be side effects and adverse events associated with the use of our product candidates. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Undesirable side effects caused by our product candidates, used as a monotherapy or in combination with another medication, could result in the delay, suspension or termination of clinical trials by us, the FDA or other regulatory authorities for a number of reasons. If we elect or are required to delay, suspend or terminate any clinical trial of any product candidates that we develop, the commercial prospects of such product candidates will be harmed and our ability to generate product revenues from any of these product candidates will be delayed or eliminated. Serious adverse events observed in clinical trials could hinder or prevent market acceptance of the product candidate at issue. Any of these occurrences may harm our business, prospects, financial condition and results of operations significantly. For example, in October 2021 we discontinued future development of our FXR program in NASH.

Moreover, if our product candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may elect to abandon their development or limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective, which may limit the commercial expectations for the product candidate if approved. We may also be required to modify our study plans based on findings in our clinical trials. Many compounds that initially showed promise in early stage testing have later been found to cause side effects that prevented further development of the compound. In addition, regulatory authorities may draw different conclusions or require additional testing to confirm these determinations.

It is possible that, as we test our product candidates in larger, longer and more extensive clinical trials including with different dosing regimens, or as the use of these product candidates becomes more widespread if they receive regulatory approval, illnesses, injuries, discomforts and other adverse events that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, will be reported by subjects. If such side effects become known later in development or upon approval, if any, such findings may harm our business, financial condition and prospects significantly.

In addition, if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such product;
- we may be required to recall a product or change the way such product is administered to patients;
- regulatory authorities may require additional warnings on the label, such as a “black box” warning or a contraindication;
- we may be required to implement a REMS or create a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients;
- the product could become less competitive; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

Interim, topline and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.*

From time to time, we may publicly disclose interim, topline or preliminary data from our clinical studies, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary or interim data we previously published. As a result, topline data should be viewed with caution until the final data are available. From time to time, we may also disclose interim data from our clinical studies. Interim data from clinical trials that we may complete are subject to the risk that

one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects and disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock. See the description of risks under the heading “Risks Related to our Common Stock” for more disclosure related to the risk of volatility in our stock price.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular drug, drug candidate or our business. If the topline data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, our product candidates may be harmed, which could harm our business, operating results, prospects or financial condition.

We have completed a Phase 1 clinical trials in the Netherlands and Australia, and may conduct additional clinical trials of product candidates outside of the United States. However, the FDA and other foreign equivalents may not accept data from such trials, in which case our development plans will be delayed, which could materially harm our business. *

In 2019, we completed a Phase 1 clinical trial for MET409 in the Netherlands, in December 2020 we completed a Phase 1 clinical trial of MET642 in Australia and in October 2021 we completed a Phase 2a Combination trial of MET409 with empagliflozin in patients with Type 2 diabetes and NASH in the United States. We are currently conducting a Phase 2a clinical trial of MET642 in patients with NASH in the United States.

Although the FDA and foreign equivalents may accept data from clinical trials conducted entirely outside the United States and not under an IND, acceptance of such study data is generally subject to certain conditions. For example, the FDA requires the clinical trial to have been conducted in accordance with GCPs, and the FDA must be able to validate the data from the clinical trial through an onsite inspection if it deems such inspection necessary. In addition, when studies are conducted only at sites outside of the United States, the FDA generally does not provide advance comment on the clinical protocols for the studies, and therefore there is an additional potential risk that the FDA could determine that the study design or protocol for a non-U.S. clinical trial was inadequate, which would likely require us to conduct additional clinical trials. Conducting clinical trials outside the United States also exposes us to additional risks, including risks associated with:

- additional foreign regulatory requirements;
- foreign exchange fluctuations;
- compliance with foreign manufacturing, customs, shipment and storage requirements;
- cultural differences in medical practice and clinical research; and
- diminished protection of intellectual property in some countries.

Even if any of our product candidates receives marketing approval, they may fail to achieve the degree of market acceptance by physicians, patients, hospitals, healthcare payors and others in the medical community necessary for commercial success.

If any of our product candidates receive marketing approval, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors and others in the medical community. If our product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- efficacy and potential advantages compared to alternative treatments;
- our ability to offer our therapies for sale at competitive prices;
- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- potential product liability claims;
- the timing of market introduction of our products as well as competitive drugs;
- the effectiveness of our or any of our potential future sales and marketing strategies;
- publicity relating to the product;
- sufficient third-party coverage and adequate reimbursement;
- the willingness of patients to pay all, or a portion of, out-of-pocket costs associated with our products in the absence of sufficient third-party coverage and adequate reimbursement; and
- the prevalence and severity of any side effects.

We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales

capabilities or enter into agreements with third parties to market and sell our product candidates, we may not be able to generate product revenue.

We have no internal sales, marketing or distribution capabilities, nor have we commercialized a product. If any of our product candidates ultimately receives regulatory approval, we may not be able to effectively market and distribute the product candidate. We may have to seek collaborators, especially for marketing and sales outside of the United States, or invest significant amounts of financial and management resources to develop internal sales, distribution and marketing capabilities, some of which will be committed prior to any confirmation that our product candidates will be approved, if at all. We may not be able to enter into collaborations or hire consultants or external service providers to assist us in sales, marketing and distribution functions on acceptable financial terms, or at all. In addition, our product revenues and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute any products that we develop ourselves. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. Even if we determine to perform sales, marketing and distribution functions ourselves, we could face a number of additional related risks, including:

- we may not be able to attract and build an effective marketing department or sales force;
- the cost of establishing a marketing department or sales force may exceed our available financial resources and the revenue generated by our product candidates that we may develop, in-license or acquire; and
- our direct sales and marketing efforts may not be successful.

Even if we receive regulatory approval for any of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. In addition, if the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and cGCPs, for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, undesirable side effects caused by the product, problems encountered by our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, either before or after product approval, may result in, among other things:

- restrictions on the marketing or manufacturing of the product;
- requirements to include additional warnings on the label;
- requirements to create a medication guide outlining the risks to patients;
- withdrawal of the product from the market;
- voluntary or mandatory product recalls;
- requirements to change the way the product is administered or for us to conduct additional clinical trials;
- 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 our strategic partners, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products;
- injunctions or the imposition of civil or criminal penalties; and
- harm to our reputation.

Additionally if any of our product candidates receives marketing approval, the FDA could require us to adopt a REMS to ensure that the benefits of the therapy outweigh its risks, which may include, among other things, a medication guide outlining the risks for distribution to patients and a communication plan to health care practitioners. Any of these events could prevent us from achieving or maintaining market acceptance of the product or the particular product candidate at issue and could significantly harm our business, prospects, financial condition and results of operations.

In addition, if any of our product candidates is approved, our product labeling, advertising and promotion will be subject to regulatory requirements and continuing regulatory review. The FDA strictly regulates the promotional claims that may be made about drug products. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. If we receive marketing approval for a product candidate, physicians may nevertheless prescribe it to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant sanctions. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. 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. 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 lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we must prioritize our research programs and will need to focus our product candidates on the potential treatment of certain indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may also relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

We may not be successful in our efforts to identify or discover additional product candidates in the future.

Our research programs may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development for a number of reasons, including:

- our inability to design such product candidates with the pharmacological properties that we desire; and
- potential product candidates may, on further study, be shown to have harmful side effects, limited to no efficacy or other characteristics that indicate that they are unlikely to be medicines that will receive marketing approval and achieve market acceptance.

Research programs to identify new product candidates require substantial technical, financial and human resources. If we are unable to identify suitable compounds for preclinical and clinical development, we will not be able to obtain product revenues in future periods, which likely would result in significant harm to our financial position and adversely impact our stock price.

Even if we obtain FDA approval of any of our product candidates, we may never obtain approval or commercialize such products outside of the United States, which would limit our ability to realize their full market potential.

In order to market any products outside of the United States, we must comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval procedures vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approvals could result in significant delays, difficulties and costs for us and may require additional preclinical studies or clinical trials which would be costly and time consuming. Regulatory requirements can vary widely from country to country and could delay or prevent the introduction of our products in those countries. Satisfying these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. In addition, our failure to obtain regulatory approval in any country may delay or have negative effects on the process for regulatory approval in other countries. We do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, our ability to realize the full market potential of our products, if any, will be harmed.

Our business could be adversely affected by the effects of health pandemics or epidemics, including the ongoing COVID-19 pandemic, in regions 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, including the ongoing COVID-19 pandemic, in regions where we have concentrations of clinical trial sites or other business operations, and could cause significant disruption in the operations of third-party manufacturers and CROs upon whom we rely. The COVID-19 pandemic has resulted in governments implementing numerous containment measures, such as travel bans and restrictions, particularly quarantines, stay at home orders and business limitations and shutdowns.

We are following, and plan to continue to follow, recommendations from federal, state and local governments regarding workplace policies, practices and procedures. Any stay-at-home order and remote work policies may negatively impact productivity, increase risks associated with cyber security, disrupt our business and delay our clinical programs and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. These and similar, and perhaps more severe, disruptions in our operations could negatively impact our business, operating results, and financial condition.

Quarantines, stay at home 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, may 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, some of our suppliers of certain materials used in the production of our drug products are located in China and Europe, where there have been government-imposed quarantines. While many of these materials may be obtained by more than one supplier, restrictions resulting from the COVID-19 pandemic may disrupt our supply chain or limit our ability to obtain sufficient materials for our product candidates.

In addition, our clinical trials may be affected by the COVID-19 pandemic. Clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the COVID-19 pandemic. 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, principal investigators and site staff (who as healthcare providers may have heightened exposure to COVID-19) may be hindered, which would adversely affect our clinical trial operations. Disruptions or restrictions on our ability to travel to monitor data from our clinical trials, or to conduct clinical trials, or the ability of patients enrolled in our studies to travel, or the ability of staff at study sites to travel, as well as temporary closures of our facilities or the facilities of our clinical trial partners and their contract manufacturers, would negatively impact our clinical trial activities. In addition, we rely on independent clinical investigators, CROs and other third-party service providers to assist us in managing, monitoring and otherwise carrying out our preclinical studies and clinical trials, including the collection of data from our clinical trials, and the outbreak may affect their ability to devote sufficient time and resources to our programs or to travel to sites to perform work for us. Similarly, our preclinical trials could be delayed and/or disrupted by the COVID-19 pandemic. As a result, the expected timeline for data readouts of our preclinical studies and clinical trials and certain regulatory filings may be negatively impacted, which would adversely affect our ability to obtain regulatory approval for and to commercialize our product candidates, increase our operating expenses and have a material adverse effect on our business, financial condition, results of operations and prospects. In addition, the COVID-19 pandemic may cause interruption or delays in the operation of the FDA or other regulatory authorities which could negatively affect our planned clinical trials.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the potential economic impact brought by, and the duration of, the COVID-19 pandemic may be difficult to assess or predict, it is currently resulting in significant disruption of global financial markets. This disruption, if sustained or recurrent, could make it more difficult for us to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The global pandemic of COVID-19 continues to rapidly evolve. The ultimate impact of the COVID-19 pandemic or a similar health pandemic or epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business, our clinical trials, healthcare systems or the global economy as a whole. These effects could have a material impact on our operations, and we will continue to monitor the COVID-19 situation closely. To the extent the COVID-19 pandemic adversely affects our operations, it may also have the effect of heightening many of the other risks described in this “Risk Factors” section.

We face substantial competition, which may result in others discovering, developing or commercializing products more quickly or marketing them more successfully than us. If their product candidates are shown to be safer or more effective than ours, then our commercial opportunity will be reduced or eliminated.*

The development and commercialization of new products is highly competitive. We compete in the segments of the pharmaceutical, biotechnology and other related markets that develop small molecules and biologics for the treatment of liver and GI diseases. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient, or are less expensive than any products that we may develop or that would render any products that we may develop obsolete or non-competitive. Our competitors also may obtain marketing approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

Major, currently-marketed IBD therapies include, but are not limited to, infliximab (marketed as Remicade by Janssen Biotech, Inc.), adalimumab (marketed as Humira by Pfizer, Inc.), vedolizumab (marketed as Entyvio by Takeda Pharmaceuticals, Inc.),

ustekinumab (marketed as Stelara by Janssen Biotech, Inc.) and tofacitinib (marketed as Xeljanz by Pfizer, Inc.), and we are aware of several companies with development programs in this indication, including, but not limited to, Abbvie Inc., Janssen Pharmaceuticals, Inc., Pfizer, Inc. and Takeda Pharmaceuticals, Inc.

Several companies have active research and development programs on FXR and are further along in development than we are with MET642. Our commercial opportunity could be substantially limited in the event that our competitors develop and commercialize products that are more effective, safer, less toxic, more convenient or cheaper than our comparable products. In geographies that are critical to our commercial success, competitors may also obtain regulatory approvals before us, resulting in our competitors building a strong market position in advance of our product's entry. We believe the competitive factors that will determine the success of our programs will be the efficacy, safety, pricing and reimbursement and convenience of our product candidates.

As more product candidates within a particular class of drugs proceed through clinical development to regulatory review and approval, the amount and type of clinical data that may be required by regulatory authorities may increase or change. Consequently, the results of our clinical trials for product candidates in those class will likely need to show a risk benefit profile that is competitive with or more favorable than those products and product candidates in order to obtain marketing approval or, if approved, a product label that is favorable for commercialization. If the risk benefit profile is not competitive with those products or product candidates, we may have developed a product that is not commercially viable, that we are not able to sell profitably or that is unable to achieve favorable pricing or reimbursement. In such circumstances, our future product revenues and financial condition would be materially and adversely affected.

Many of our competitors, such as large pharmaceutical and biotechnology companies like Arena Pharmaceuticals, Gossamer Bio, Prometheus Biosciences, and Protagonist Therapeutics have longer operating histories and significantly greater financial resources and expertise in research and development, manufacturing, preclinical studies, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do.

Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and subject enrollment for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

The key competitive factors affecting the success of all of our programs are likely to be their efficacy, safety, convenience and availability of coverage and reimbursement. If we are not successful in developing, commercializing and achieving higher levels of reimbursement than our competitors, we will not be able to compete against them and our business would be materially harmed.

If the market opportunities for any product that we or our strategic partners develop are smaller than we believe they are, our revenue may be adversely affected and our business may suffer.

We are focused on the development of treatments for liver and GI diseases. Our projections of addressable patient populations that have the potential to benefit from treatment with our product candidates are based on estimates. These estimates have been derived from a variety of sources, including the scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. The number of patients may turn out to be lower than expected. If any of our estimates are inaccurate, the market opportunities for any of our product candidates could be significantly diminished and have an adverse material impact on our business.

Risks Related to Manufacturing and Our Reliance on Third Parties

We contract with third parties for the manufacturing and supply of product candidates for use in preclinical testing and clinical trials, which supply may become limited or interrupted or may not be of satisfactory quality and quantity.*

We do not have any manufacturing facilities. We produce, in our laboratory, relatively small quantities of compounds for evaluation in our research programs. We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates for preclinical and clinical testing, as well as for commercial supply if any of our product candidates are approved. We currently do not have long-term agreements with any of our third-party manufacturers and do not have any contractual relationships for the manufacture of commercial supplies of any of our product candidates, if they are approved. This reliance increases the risk that we will not have sufficient quantities of our product candidates or products, if approved, or such quantities at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts. This could be particularly problematic where we rely on a single-source supplier, as is currently the case for the manufacture of the drug substance and the drug product for MET642. In addition, if we were to experience an unexpected loss of supply of our product candidates for any reason, including as a result of manufacturing, supply or storage issues, our business would be harmed, and we could experience delays, disruptions, suspensions or terminations of, or be required to restart or repeat, any pending or ongoing clinical trials.

Furthermore, all entities involved in the preparation of therapeutics for clinical trials or commercial sale, including our existing contract manufacturers for MET642 and future product candidates, are subject to extensive regulation. Components of a finished therapeutic product approved for commercial sale or used in clinical trials must be manufactured in accordance with cGMP requirements. These regulations govern manufacturing processes and procedures, including record keeping, and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Poor control of production processes can lead to the introduction of contaminants, or to inadvertent changes in the properties or stability of

our product candidates that may not be detectable in final product testing. We or our contract manufacturers must supply all necessary documentation in support of an NDA on a timely basis and must adhere to the FDA's GLP regulations and cGMP regulations enforced by the FDA through its facilities inspection program. Comparable foreign regulatory authorities may require compliance with similar requirements. The facilities and quality systems of our third-party contractor manufacturers must pass a pre-approval inspection for compliance with the applicable regulations as a condition of marketing approval of our product candidates. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with cGMP regulations, but we are nevertheless responsible for their failures to comply with applicable laws and regulations, including cGMP.

In the event that any of our manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do so on commercially reasonable terms, if at all. Further, we may be unable to use the product produced by that manufacturer, or if the manufacturer has manufactured product for our commercial sale, if and when we obtain approval, we could be subject to a recall of such product.

Any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements. In some cases, the technical skills or technology required to manufacture our product candidates may be unique or proprietary to the original manufacturer and we may have difficulty transferring such skills or technology to another third party and a feasible alternative may not exist. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third-party manufacture our product candidates. The process of changing manufacturers is extensive and time consuming and could cause delays or interruptions in our drug development. Further, if we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop product candidates in a timely manner or within budget.

Our or a third party's failure to execute on our manufacturing requirements, to do so on commercially reasonable terms and comply with cGMP could adversely affect our business in a number of ways, including:

- an inability to initiate or continue clinical trials of our product candidates under development;
- delay in submitting regulatory applications, or receiving marketing approvals, for our product candidates;
- subjecting third-party manufacturing facilities or our manufacturing facilities to additional inspections by regulatory authorities;
- requirements to cease development or to recall batches of our product candidates; and
- in the event of approval to market and commercialize our product candidates, an inability to meet commercial demands for our product or any other future product candidates.

In order to conduct later-stage clinical trials of our product candidates, we will need to manufacture them in large quantities. We, or our manufacturing partners, may be unable to successfully increase the manufacturing capacity for any of our product candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If we or our manufacturing partners are unable to successfully scale up the manufacture of our product candidates in sufficient quality and quantity, the development, testing and clinical trials of that product candidate may be delayed or become infeasible, and marketing approval or commercial launch of any resulting product may be delayed or not obtained, which could significantly harm our business.

Additionally, our third-party manufacturers may experience manufacturing difficulties due to resource constraints or as a result of labor disputes, or unstable political environments, or health pandemics or epidemics such as the ongoing COVID-19 pandemic. For example, many of our raw materials for manufacture of MET642 are produced in Europe, which could impact our ability to manufacture and supply material for clinical and commercial supply. If our contract manufacturers were to encounter any manufacturing difficulties or delays due to these factors, our ability to provide our product candidates to patients in clinical trials, or to provide product for treatment of patients if and when approved, would be jeopardized.

We rely, and intend to rely, on third parties to conduct our clinical trials and perform some of our research and preclinical studies. If these third parties do not satisfactorily carry out their contractual duties or fail to meet expected deadlines, our development programs may be delayed or subject to increased costs, each of which may have an adverse effect on our business and prospects.

We do not have the ability to conduct all aspects of our preclinical testing or clinical trials ourselves. As a result, we are, and expect to remain, dependent on third parties to conduct our ongoing and planned clinical trials of our product candidates, and any future preclinical and clinical trials of any other product candidates. The timing of the initiation and completion of these trials will therefore be partially controlled by such third parties and may result in delays to our development programs. Specifically, we expect CROs, clinical investigators, and consultants to play a significant role in the conduct of these trials and the subsequent collection and analysis of data. However, we will not be able to control all aspects of their activities. Nevertheless, we are responsible for ensuring that each clinical trial is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on the CROs and other third parties does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with GCP requirements, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the EEA and comparable foreign regulatory authorities for all of our product candidates in clinical development. Regulatory authorities enforce these GCP requirements through periodic inspections of trial sponsors, clinical trial investigators and clinical trial sites. If we or any of our CROs or clinical trial sites fail to comply with applicable GCP requirements, the data generated in our clinical trials may be deemed unreliable, and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to stop and/or repeat clinical trials, which would delay the marketing approval process.

There is no guarantee that any such CROs, clinical trial investigators or other third parties on which we rely will devote adequate time and resources to our development activities or perform as contractually required. If any of these third parties fail to meet expected deadlines, adhere to our clinical protocols or meet regulatory requirements, otherwise performs in a substandard manner, or terminates its engagement with us, the timelines for our development programs may be extended or delayed or our development activities may be suspended or terminated. If our clinical trial site terminates for any reason, we may experience the loss of follow-up information on subjects enrolled in such clinical trial unless we are able to transfer those subjects to another qualified clinical trial site, which may be difficult or impossible. In addition, clinical trial investigators for our clinical trial may serve as scientific advisors or consultants to us from time to time and may receive cash or equity compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA or comparable foreign regulatory authorities concludes that the financial relationship may have affected the interpretation of the trial, the integrity of the data generated at the applicable clinical trial site may be questioned and the utility of the clinical trial itself may be jeopardized, which could result in the delay or rejection of any marketing application we submit by the FDA or any comparable foreign regulatory authority. Any such delay or rejection could prevent us from commercializing our product candidates.

Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors for whom they may also be conducting clinical trials or other drug development activities that could harm our competitive position. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our products.

Even if we receive marketing approval, we may not be able to successfully commercialize our product candidates due to unfavorable pricing regulations or third-party coverage and reimbursement policies, which could make it difficult for us to sell our product candidates profitably.

Obtaining coverage and reimbursement approval for a product from a government or other third-party payor is a time consuming and costly process that could require us to provide supporting scientific, clinical and cost effectiveness data for the use of our products to the payor. There may be significant delays in obtaining such coverage and reimbursement for newly approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for coverage and reimbursement does not imply that a product will be paid for in all cases or at a rate that covers our costs, including research, development, intellectual property, manufacture, sale and distribution expenses. Interim reimbursement levels for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the product and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost products and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors, by any future laws limiting drug prices and by any future relaxation of laws that presently restrict imports of product from countries where they may be sold at lower prices than in the United States.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting reimbursement policies, but also have their own methods and approval process apart from Medicare coverage and reimbursement determinations.

Coverage and reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor’s determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;

- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

We cannot be sure that coverage and reimbursement will be available for any product that we commercialize and, if coverage and reimbursement are available, what the level of reimbursement will be. Obtaining reimbursement for our products may be particularly difficult because of the higher prices often associated with branded therapeutics and therapeutics administered under the supervision of a physician. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

Reimbursement may impact the demand for, and the price of, any product for which we obtain marketing approval. Assuming we obtain coverage for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Patients who are prescribed medications for the treatment of their conditions, and their prescribing physicians, generally rely on third-party payors to reimburse all or part of the costs associated with those medications. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of our products. Therefore, coverage and adequate reimbursement is critical to new product acceptance. Coverage decisions may depend upon clinical and economic standards that disfavor new products when more established or lower cost therapeutic alternatives are already available or subsequently become available.

We expect to experience pricing pressures in connection with the sale of any of our product candidates due to the trend toward managed healthcare, the increasing influence of health maintenance organizations, and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription medicines, medical devices and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the successful commercialization of new products. Further, the adoption and implementation of any future governmental cost containment or other health reform initiative may result in additional downward pressure on the price that we may receive for any approved product.

Outside of the United States, many countries require approval of the sale price of a product before it can be marketed and the pricing review period only begins after marketing or product licensing approval is granted. To obtain reimbursement or pricing approval in some of these countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product candidate in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues, if any, we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if such product candidates obtain marketing approval.

We may wish to acquire rights to future assets through in-licensing or may attempt to form collaborations in the future with respect to our product candidates, but may not be able to do so, which may cause us to alter or delay our development and commercialization plans.

The development and potential commercialization of our product candidates will require substantial additional capital to fund expenses. We may, in the future, decide to collaborate with biopharmaceutical companies for the development and potential commercialization of product candidates. We will face significant competition in seeking appropriate collaborators. We may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. If and when we collaborate with a third party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third party. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the following:

- the design or results of clinical trials;
- the likelihood of approval by the FDA or comparable foreign regulatory authorities;
- the potential market for the product candidate;
- the costs and complexities of manufacturing and delivering such product candidate to patients;
- the potential of competing products;
- the existence of uncertainty with respect to our ownership of technology or other rights, which can exist if there is a challenge to such ownership without regard to the merits of the challenge; and
- industry and market conditions generally.

The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. We may also be restricted under any license agreements from entering into agreements on certain terms or at all with potential collaborators. Collaborations are complex and time consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators

and changes to the strategies of the combined company. As a result, we may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of such product candidate, reduce or delay one or more of our other development programs, delay the potential commercialization or reduce the scope of any planned sales or marketing activities for such product candidate, or increase our expenditures and undertake development, manufacturing or commercialization activities at our own expense. If we elect to increase our expenditures to fund development, manufacturing or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue. Even if we are successful in our efforts to establish such collaborations, the terms that we agree upon may not be favorable to us, and we may not be able to maintain such collaborations if, for example, development approval of a product candidate is delayed, the safety of a product candidate is questioned or sales of an approved product candidate are unsatisfactory.

Risks Related to Our Intellectual Property

Our commercial success depends on our ability to obtain and maintain sufficient intellectual property protection for our product candidates and other proprietary technologies.*

Our commercial success depends in large part on our ability to obtain and maintain patent and other intellectual property protection in the United States and various foreign jurisdictions such as Europe, China, and Japan with respect to our product candidates, proprietary technologies, and their uses, and the manufacture and formulation thereof, that we develop. If we are unable to obtain and maintain patent protection with respect to our product candidates, proprietary technologies, and their uses, our business, financial condition, results of operations and prospects could be materially harmed. Given that the development of our product candidates, proprietary technologies, and their uses is at an early stage, our intellectual property portfolio with respect to certain aspects of our product candidates and proprietary technologies is also at an early stage.

We generally seek to protect our proprietary position by filing patent applications in the United States, Europe, China, Japan and other foreign jurisdictions related to our product candidates, proprietary technologies and their uses which are important to our business. Our pending and future patent applications cannot be enforced against third parties practicing the technology claimed in such patent applications unless, and until, patents issue from such patent applications, and then only to the extent the issued claims cover the technology. There can be no assurance that our patent applications will result in patents being issued or that issued patents will afford sufficient protection against competitors with similar technology, nor can there be any assurance that the patents issued will not be infringed, designed around or invalidated by third parties. Even issued patents may later be found invalid or unenforceable or may be modified or revoked in proceedings instituted by third parties before various patent offices or in courts. The degree of future protection for our proprietary rights is uncertain. Only limited protection may be available and may not adequately protect our rights or permit us to gain or keep any competitive advantage. This failure to obtain the intellectual property rights relating to our product candidates could have a material adverse effect on our financial condition and results of operations.

The patent application process is subject to numerous risks and uncertainties, and there can be no assurance that we or any of our potential future collaborators will be successful in protecting our product candidates by obtaining and defending patents. Obtaining and enforcing patents is expensive and time consuming, and we may not be able to file and prosecute all necessary or desirable patent applications, or maintain and/or enforce patents that may issue based on our patent applications, at a reasonable cost or in a timely manner, including as a result of the ongoing COVID-19 pandemic. It is also possible that we will fail to identify patentable aspects of our research and development results before it is too late to obtain patent protection.

Although we enter into non-disclosure and confidentiality agreements with parties who have access to patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, contract research organizations, contract manufacturers, consultants, independent contractors, advisors and other third parties, any of these parties may breach these agreements and disclose such results before a patent application is filed, thereby jeopardizing our ability to seek adequate patent protection.

If the scope of any patent protection we obtain is not sufficiently broad, or if we lose any of our patent protection, our ability to prevent our competitors from commercializing similar or identical product candidates would be adversely affected.*

The patent position of biopharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation, resulting in court decisions, including Supreme Court decisions, that have increased uncertainties as to the ability to enforce patent rights in the future. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States, or vice versa.

Further, we may not be aware of all third-party intellectual property rights potentially relating to our research programs and product candidates, or their intended uses, and as a result the potential impact of such third-party intellectual property rights upon the patentability of our own patents and patent applications, as well as the potential impact of such third-party intellectual property upon our freedom to operate, is highly uncertain. Because patent applications are maintained as confidential for a certain period of time (for example, patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases, not at all), until the relevant patents and patent applications are published, we may be unaware of third-party patents that may be infringed by commercialization of any of our product candidates, and we cannot be certain that we were the first to file a patent application related to a product candidate or technology. Moreover, because patent applications can take many years to issue, there may be currently-pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, identification of third-party patent rights that may be relevant to our technology is difficult because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent

claims. There is also no assurance that there is not prior art of which we are aware, but which we do not believe is relevant to our business, which may, nonetheless, ultimately be found to limit our ability to make, use, sell, offer for sale or import our products that may be approved in the future, or impair our competitive position. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon their patents. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain.

Our patents or pending patent applications may be challenged in the courts or patent offices in the United States, Europe, China, Japan and other foreign jurisdictions. For example, we may be subject to a third-party pre-issuance submission of prior art to the USPTO or become involved in post-grant review procedures, derivations, reexaminations, or inter parties review proceedings, in the United States or oppositions or similar proceedings in foreign jurisdictions, challenging our patent rights. The legal threshold for initiating such proceedings may be low, so that even proceedings with a low probability of success might be initiated. An adverse determination in any such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated, or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products.

Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our intellectual property may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third-party patent which might adversely affect our ability to develop and market our products.*

As the biopharmaceutical industry expands and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties. There can be no assurance that our operations do not, or will not in the future, infringe existing or future third-party patents. Identification of third-party patent rights that may be relevant to our operations is difficult because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. We cannot guarantee that any of our patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending application in the United States and abroad that is relevant to our research and other operations or necessary for the commercialization of our product candidates in any jurisdiction.

Numerous U.S. and foreign patents and pending patent applications exist in our market that are owned by third parties. Our competitors in both the United States and abroad, many of which have substantially greater resources and have made substantial investments in patent portfolios and competing technologies, may have applied for or obtained or may in the future apply for and obtain, patents that will prevent, limit or otherwise interfere with our ability to make, use and sell our products. We do not always conduct independent reviews of third-party pending patent applications and patents. Patent applications in the United States and elsewhere are typically published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Certain U.S. applications that will not be filed outside the U.S. can remain confidential until patents issue. In addition, patent applications in the United States and elsewhere can be pending for many years before issuance, or unintentionally abandoned patents or patent applications can be revived. Furthermore, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our technologies, our products or the use of our products. As such, there may be third-party pending patent applications or recently revived third-party patents of which we are unaware. These patent applications may later result in issued patents that, or the revival of these previously abandoned patents, will prevent, limit or otherwise interfere with our ability to make, use or sell our products.

The scope of a patent claim is determined by an interpretation of the relevant law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a patent claim may be incorrect, which may negatively impact our ability to market our products. We may incorrectly determine that our products are not covered by a third-party patent or may incorrectly predict whether a third party's pending application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the United States or abroad that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our product candidates. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our products.

We cannot provide any assurances that third-party patents do not exist which might be enforced against our current technology, including our research programs, product candidates, their respective methods of use, manufacture and formulations thereof, and could result in either an injunction prohibiting our manufacture or future sales, or, with respect to our future sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties, which could be significant.

We cannot ensure that patent rights relating to inventions described and claimed in our pending patent applications will be issued or that patents based on our patent applications will not be challenged and rendered invalid and/or unenforceable.*

We have patent applications and patents in our portfolio relating to our research programs and product candidates that are pending at the patent offices in the U.S., Europe, China, Japan and other foreign jurisdictions. However, we cannot predict:

- if and when patents may be issued based on our patent applications, including as a result of the delays at the applicable patent office as a result of the ongoing COVID-19 pandemic;
- the scope of protection of any patent issuing based on our patent applications;

- whether the claims of any patent issuing based on our patent applications will provide protection against competitors;
- whether or not third parties will find ways to invalidate or circumvent our patent rights;
- whether or not others will obtain patents claiming aspects similar to those covered by our patents and patent applications;
- whether we will need to initiate litigation or administrative proceedings to enforce and/or defend our patent rights which will be costly whether we win or lose;
- whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof; and/or
- whether, as the COVID-19 pandemic continues to spread around the globe, we may experience patent office interruption or delays to our ability to timely secure patent coverage to our product candidates.

We cannot be certain that the claims in our pending patent applications directed to our product candidates, as well as technologies relating to our research programs will be considered patentable by the USPTO or by patent offices in foreign countries. One aspect of the determination of patentability of our inventions depends on the scope and content of the "prior art," information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention. There may be prior art of which we are not aware that may affect the patentability of our patent claims or, if issued, affect the validity or enforceability of a patent claim relevant to our business. There is no assurance that there is not prior art of which we are aware, but which we do not believe is relevant to our business, which may, nonetheless, ultimately be found to limit our ability to make, use, sell, offer for sale or import our products that may be approved in the future, or impair our competitive position. Even if the patents do issue based on our patent applications, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. Furthermore, even if they are unchallenged, patents in our portfolio may not adequately exclude third parties from practicing relevant technology or prevent others from designing around our claims. If the breadth or strength of our intellectual property position with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop and threaten our ability to commercialize our product candidates. In the event of litigation or administrative proceedings concerning any of our issued patents, we cannot be certain that the claims in any of our issued patents will be considered valid by courts in the United States or foreign countries.

If we are sued for infringing intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from developing or commercializing our product candidates.*

Our commercial success depends, in part, on our ability to develop, manufacture, market and sell our product candidates without infringing the intellectual property and other proprietary rights of third parties. Third parties may allege that we have infringed or misappropriated their intellectual property. Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and, even if resolved in our favor, is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities, and there may be additional delays in such litigation or other legal proceedings due to the ongoing COVID-19 pandemic. Such litigation or other legal proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to adequately conduct such litigation or other legal proceedings. Some of our competitors may be able to sustain the costs of such litigation or other legal proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other legal proceedings could have a material adverse effect on our ability to compete in the marketplace.

There is a substantial amount of intellectual property litigation in the biotechnology and pharmaceutical industries, and we may become party to, or threatened with, litigation or other legal proceedings regarding intellectual property rights with respect to our products candidates. Third parties may assert infringement claims against us based on existing or future intellectual property rights. The pharmaceutical and biotechnology industries have produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The scope of patent claims is subject to interpretation by the courts, and the interpretation is not always uniform. If we were sued for patent infringement, we would need to demonstrate that our product candidates, or methods of use either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Proving invalidity of third-party patent claims may be difficult and uncertain. Even if we are successful in these legal proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in defending our rights in these legal proceedings, which could have a material adverse effect on our business and operations, including as a result of additional delays in such legal proceedings due to the ongoing COVID-19 pandemic. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

If we are found to infringe a third party's intellectual property rights, we could be forced, including by court order, to cease developing, manufacturing or commercializing the infringing product candidate or product. Alternatively, we may be required to obtain a license from such third party in order to use the infringing technology and continue developing, manufacturing or marketing the infringing product candidate. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.

Competitors may infringe our patents, trademarks, copyrights or other intellectual property that relate to our research programs and product candidates, their respective methods of use, manufacture and formulations thereof. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents, in addition to counterclaims asserting that our patents are invalid or unenforceable, or both. In any patent infringement proceeding, there is a risk that a court will decide that a patent that we own or have licensed is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of our patents is upheld, the court will construe the claims of our patents narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention at issue. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Even if we establish infringement by competitors, a court may decide not to grant an injunction against further infringing activity by competitors and instead award only monetary damages, which may or may not be an adequate remedy. 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 litigation. Moreover, we cannot assure you that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded, and there may be additional delays as a result of the ongoing COVID-19 pandemic. Even if we ultimately prevail in such infringement claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

Because of the expense and uncertainty of litigation, we may not be in a position to enforce our intellectual property rights against third parties.

Because of the expense and uncertainty of litigation, we may conclude that even if a third party is infringing any one of our issued patents or other intellectual property rights, the risk-adjusted cost of bringing and enforcing such an infringement claim or action may be too high or not in the best interest of our company or our stockholders. In such cases, we may decide that the more prudent course of action is to simply monitor the situation or initiate or seek some other non-litigious action or solution.

Intellectual property litigation may lead to unfavorable publicity that harms our reputation and causes the market price of our common stock to decline.

During the course of any intellectual property litigation, there could be public announcements of the initiation of the litigation as well as results of hearings, rulings on motions, and other interim proceedings in the litigation. If securities analysts or investors regard these announcements as negative, the perceived value of our existing products, programs or intellectual property could be diminished. Accordingly, the market price of shares of our common stock may decline. Such announcements could also harm our reputation or the market for our future products, which could have a material adverse effect on our business.

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

Patents are of national or regional effect, and although we have one issued United States patent for our product candidate MET642 and pending patent applications in the United States, Europe, China, Japan and other foreign jurisdictions for MET642, filing, prosecuting and defending patents on all of our research programs and product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection, but where enforcement is not as strong as that in the United States. These competitor products may compete with our product candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Various companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of many countries do not favor the enforcement of patents and other intellectual property protection, particularly those relating to pharmaceuticals, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary intellectual property rights.

Various countries outside the United States have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. As a result, a patent owner may have limited remedies in certain circumstances, which could materially diminish the value of such patent. If we are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations and prospects may be adversely affected. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Further, the standards applied by the USPTO and foreign patent offices in granting patents are not always applied uniformly or predictably. As such, we do not know the degree of future protection that we will have on our technologies, products and product candidates. While we will endeavor to try to protect our technologies, products and product candidates with intellectual property rights such as patents, as appropriate, the process of obtaining patents is time consuming, expensive and unpredictable.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.*

On September 16, 2011, the Leahy-Smith America Invents Act (the "Leahy-Smith Act") was signed into law in the United States. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. In particular, under the Leahy-Smith Act, the United States transitioned in March 2013 to a "first inventor to file" system in which, assuming that other requirements of patentability are met, the first inventor to file a patent application will be entitled to the patent regardless of whether a third party was first to invent the claimed invention. A third party that files a patent application in the USPTO after March 2013 but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application, including with respect to any delays due to the ongoing COVID-19 pandemic. Furthermore, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our technology and the prior art allow our technology to be patented over the prior art. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we were the first to either file any patent application related to our product candidates or invent any of the inventions claimed in our patents or patent applications.

The Leahy-Smith Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent with the use of USPTO administered post-grant proceedings, including post-grant review, *inter partes* review, and derivation proceedings. An adverse determination in any such submission or proceeding could reduce the scope or enforceability of, or invalidate, our patent rights, which could adversely affect our competitive position. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a United States district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a United States district court action. Thus, the Leahy-Smith Act 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, financial condition, results of operations and prospects.

Changes in patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.*

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents relating to our research programs and product candidates. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Changes in either the patent laws or interpretation of the patent laws, rules and regulations in the United States and other countries could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. We cannot predict the breadth of claims that may be issued or enforced in our patents or in third-party patents. In addition, the U.S. Congress or foreign legislative bodies may pass patent reform legislation that is unfavorable to us.

Depending on decisions by the U.S. Congress, the U.S. federal courts, the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce our existing patents or patents we might obtain in the future. For example, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained.

Depending on future actions by the U.S. Congress, the U.S. federal courts, the USPTO, or similar authorities in foreign jurisdictions, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

Obtaining and maintaining patent protection depends on compliance with various procedural requirements, document submissions, fee payments and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.*

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or patent applications will be required to be paid to the USPTO and various foreign patent agencies at various stages over the lifetime of our patents and/or patent applications. We have systems in place to remind us to pay these fees, and we rely on our outside patent annuity service to pay these fees when due. In addition, the USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply with these provisions. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which noncompliance (including as a result of the ongoing COVID-19 pandemic) can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction, including as a result of failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If such an event were to occur, including with respect to the patents and patent applications covering our research programs and product candidates, as well as their respective methods of use, manufacture and formulations thereof, it could have a material adverse effect on our business, as for example, competitors might be able to enter the market earlier than would otherwise have been the case.

We may become subject to claims challenging the inventorship or ownership of our patents and other intellectual property.*

We may be subject to claims that former employees, consultants, independent contractors, collaborators or other third parties have an interest in our patents or other intellectual property as an owner, co-owner, inventor or co-inventor. The failure to name the proper inventors on a patent can result in the patents being unenforceable. Inventorship disputes may arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in developing our product candidates or as a result of questions regarding co-ownership of potential joint inventions. Litigation or an alternative dispute resolution such as a mediation or an arbitration may be necessary to resolve these and other claims challenging inventorship and/or ownership. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such product candidates are commercialized. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from generic products. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we do not obtain patent term extension for our product candidates, our commercial success may be materially harmed.*

A patent term extension based on regulatory delay may be available in the United States. Depending upon the timing, duration and specifics of FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984 (the “Hatch-Waxman Act”). The Hatch-Waxman Act permits a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, only a single patent can be extended for each FDA approved product as compensation for the patent term lost during the FDA regulatory review process, and any patent can be extended only once, for a single product. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. Moreover, the scope of protection during the period of the patent term extension does not extend to the full scope of the claim, but instead only to the scope of the product as approved. Patent term extension may also be available in certain foreign countries upon regulatory approval of our product candidates. Laws governing analogous patent term extensions in foreign jurisdictions vary widely, as do laws governing the ability to obtain multiple patents from a single patent family. Additionally, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced, possibly materially. Further, if this occurs, our competitors may take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

We have registered trademarks with the appropriate agencies in the United States, Europe, and China. Our future trademarks or trade names may be challenged, infringed, circumvented or declared generic or descriptive determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During trademark registration proceedings, we may receive rejections. Although we would be given an opportunity to respond to those rejections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names.

Moreover, any name we have proposed to use with our product candidates in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. Similar requirements exist in Europe. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA (or an equivalent administrative body in a foreign jurisdiction) objects to any of our proposed proprietary product names, it may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. Furthermore, in many countries, owning and maintaining a trademark registration may not provide an adequate defense against a subsequent infringement claim asserted by the owner of a senior trademark. At times, competitors or other third parties may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. If we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make product candidates that are similar to ours but that are not covered by the claims of the patents that we own or have exclusively licensed;
- we or our future licensors or collaborators might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed;
- we or our future licensors or collaborators might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own or have exclusively licensed may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- we cannot predict the scope of protection of any patent issuing based on our patent applications, including whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries;
- the claims of any patent issuing based on our patent applications may not provide protection against competitors or any competitive advantages, or may be challenged by third parties;
- if enforced, a court may not hold that our patents are valid, enforceable and infringed;
- we may need to initiate litigation or administrative proceedings to enforce and/or defend our patent rights which will be costly whether we win or lose;
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property;
- we may fail to adequately protect and police our trademarks and trade secrets; and
- the patents of others may have an adverse effect on our business including if others obtain patents claiming subject matter similar to or improving that covered by our patents and patent applications.

Should any of these events occur, they could significantly harm our business, results of operations and prospects.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patent protection for some of our technology and product candidates, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. Elements of our product candidates, including processes for their preparation and manufacture, may involve proprietary know-how, information, or technology that is not covered by patents, and thus for these aspects we may consider trade secrets and know-how to be our primary intellectual property. Any disclosure, either intentional or unintentional, by our employees, the employees of third parties with whom we share our facilities or third-party consultants and vendors that we engage to perform research, clinical trials or manufacturing activities, or misappropriation by third parties (such as through a cybersecurity breach) of our trade secrets or proprietary information could enable competitors to duplicate or surpass our technological achievements, thus eroding our competitive position in our market.

Trade secrets and unpatented know-how can be difficult to trace, protect and enforce. We require our employees to enter into written employment agreements containing provisions of confidentiality and obligations to assign to us any inventions generated in the course of their employment. We and any third parties with whom we share facilities enter into written agreements that include confidentiality and intellectual property obligations to protect each party's property, potential trade secrets, proprietary know-how and information. We further seek to protect our potential trade secrets, proprietary know-how and information in part, by entering into non-disclosure and confidentiality agreements with parties who are given access to them, such as our corporate collaborators, outside scientific collaborators, contract research organizations, contract manufacturers, consultants, advisors and other third parties. With our consultants, contractors and outside scientific collaborators, these agreements typically include invention assignment obligations. Although we have taken steps to protect our trade secrets and unpatented know-how, we cannot provide any assurances that all such agreements have been duly executed, and any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets and unpatented know-how, and we may not be able to obtain adequate remedies for such breaches. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. Unauthorized parties may also attempt to copy or reverse engineer certain aspects of our products that we consider proprietary. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets.

Trade secrets may be independently developed by others in a manner that could prevent legal recourse by us. Trade secrets will over time be disseminated within the industry through independent development, the publication of journal articles and the movement of skilled personnel from company to company or academic to industry scientific positions. Though our agreements with third parties typically restrict the ability of our advisors, employees, collaborators, licensors, suppliers, third-party contractors and consultants to publish data potentially relating to our trade secrets, our agreements may contain certain limited publication rights. Because from time to time we expect to rely on third parties in the development, manufacture and distribution of our products and provision of our services, we must, at times, share trade secrets with them. Despite employing the contractual and other security precautions described above, the need to share trade secrets increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be harmed.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We employ individuals who previously worked with other companies, including our competitors or potential competitors. We could in the future be subject to claims that we or our employees, consultants, or independent contractors have inadvertently or otherwise used or disclosed alleged trade secrets or other confidential information of current or former employers or competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the intellectual property, proprietary information, know-how or trade secrets of others in their work for us, we may become subject to claims that we caused an individual to breach the terms of his or her non-competition or non-solicitation agreement, or that we or these individuals have, inadvertently or otherwise, used or disclosed the alleged intellectual property, proprietary information, know-how or trade secrets of a current or former employer or competitor.

While we may litigate to defend ourselves against these claims, even if we are successful, litigation could result in substantial costs and could be a distraction to management and other employees. If our defenses to these claims fail, in addition to requiring us to pay monetary damages, a court could prohibit us from using technologies that are essential to our product candidates, if such technologies are found to incorporate or be derived from the trade secrets or other proprietary information of the current or former employers. Moreover, any such litigation or the threat thereof may adversely affect our reputation, our ability to form strategic alliances or sublicense our rights to collaborators, engage with scientific advisors or hire employees or consultants, each of which would have an adverse effect on our business, results of operations and financial condition.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we rely on third parties to research and develop and to manufacture our product candidates, we must share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, consulting agreements or other similar agreements with our advisors, employees, third-party contractors

and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, including our trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's independent discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

Although these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our trade secrets, our agreements may contain certain limited publication rights. For example, any academic institution that we may collaborate with will likely expect to be granted rights to publish data arising out of such collaboration, and any joint research and development programs may require us to share trade secrets under the terms of our research and development or similar agreements. Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of our agreements with third parties, independent development or publication of information by any of our third-party collaborators. A competitor's discovery of our trade secrets would impair our competitive position and have an adverse impact on our business.

In the future, we may need to obtain additional licenses of third-party technology that may not be available to us or are available only on commercially unreasonable terms, and which may cause us to operate our business in a more costly or otherwise adverse manner that was not anticipated.

From time to time, we may be required to license technologies relating to our therapeutic research programs from additional third parties to further develop or commercialize our product candidates. Should we be required to obtain licenses to any third-party technology, including any such patents required to manufacture, use or sell our product candidates, such licenses may not be available to us on commercially reasonable terms, or at all. The inability to obtain any third-party license required to develop or commercialize any of our product candidates could cause us to abandon any related efforts, which could seriously harm our business and operations.

Any collaboration arrangements that we may enter into in the future may not be successful, which could adversely affect our ability to develop and commercialize our products.

Any future collaborations that we enter into may not be successful. The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Collaborations are subject to numerous risks, which may include that:

- collaborators have significant discretion in determining the efforts and resources that they will apply to collaborations;
- collaborators may not pursue development and commercialization of our products or may elect not to continue or renew development or commercialization programs based on trial or test results, changes in their strategic focus due to the acquisition of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities, or the ongoing COVID-19 pandemic;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates;
- a collaborator with marketing, manufacturing and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- we could grant exclusive rights to our collaborators that would prevent us from collaborating with others;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that causes the delay or termination of the research, development or commercialization of our current or future products or that results in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated, and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable current or future products;
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to develop or commercialize such intellectual property; and
- a collaborator's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings.

Risks Related to Employee Matters and Managing Growth and Other Risks Related to Our Business

We are highly dependent on the services of our key personnel.

We are highly dependent on the services of our key personnel, Preston Klassen, M.D., who serves as our President and Chief Executive Officer, Patricia Millican, who serves as our Chief Financial Officer, and Hubert Chen, M.D., who serves as our Chief Medical Officer. Although we have entered into agreements with them regarding their employment, they are not for a specific term and each of them may terminate their employment with us at any time, though we are not aware of any present intention of these individuals to leave us.

We expect to expand our development, regulatory and operational capabilities and, as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.*

As of September 30, 2021, we had 35 full-time employees. As we advance our research and development programs, we expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of clinical development, quality, regulatory affairs and, if any of our product candidates receives marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must:

- identify, recruit, integrate, maintain and motivate additional qualified personnel;
- manage our development efforts effectively, including the initiation and conduct of clinical trials for our product candidates; and
- improve our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to develop, manufacture and commercialize our product candidates will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert financial and other resources, and a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time, to managing these growth activities.

We currently rely, and for the foreseeable future will continue to rely, in substantial part on certain third-party contract organizations, advisors and consultants to provide certain services, including assuming substantial responsibilities for the conduct of our clinical trials and the manufacture of our product candidates. We cannot assure you that the services of such third-party contract organizations, advisors and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by our vendors or consultants is compromised for any reason, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain marketing approval of our product candidates or otherwise advance our business. We cannot assure you that we will be able to properly manage our existing vendors or consultants or find other competent outside vendors and consultants on economically reasonable terms, or at all.

If we are not able to effectively expand our organization by hiring new employees and expanding our groups of consultants and contractors, we may not be able to successfully implement the tasks necessary to further develop and commercialize our product candidates and, accordingly, may not achieve our research, development and commercialization goals.

Our future success depends on our ability to retain key employees, consultants and advisors and to attract, retain and motivate qualified personnel.

Our industry has experienced a high rate of turnover in recent years. Our ability to compete in the highly competitive biopharmaceuticals industry depends upon our ability to attract, retain and motivate highly skilled and experienced personnel with scientific, medical, regulatory, manufacturing and management skills and experience. We conduct our operations in the greater San Diego area, a region that is home to many other biopharmaceutical companies as well as many academic and research institutions, resulting in fierce competition for qualified personnel. We may not be able to attract or retain qualified personnel in the future due to the intense competition for a limited number of qualified personnel among biopharmaceutical companies. Many of the other biopharmaceutical companies against which we compete have greater financial and other resources, different risk profiles and a longer history in the industry than we do. Our competitors may provide higher compensation, more diverse opportunities and/or better opportunities for career advancement. Any or all of these competing factors may limit our ability to continue to attract and retain high quality personnel, which could negatively affect our ability to successfully develop and commercialize our product candidates and to grow our business and operations as currently contemplated.

Our employees, clinical trial investigators, CROs, consultants, vendors and any potential commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, clinical trial investigators, CROs, consultants, vendors and any potential commercial partners. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates: (i) U.S. laws and regulations or those of foreign jurisdictions, including those laws that require the reporting of true, complete and accurate information, (ii) manufacturing standards, (iii) federal and state health and data privacy, security, fraud and abuse, government price reporting, transparency reporting requirements, and other healthcare laws and regulations in the United States and abroad or (iv) laws that require the true, complete and accurate reporting of financial information or data. Such misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, as well as a disclosure program and other applicable policies and procedures, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, damages, fines, disgorgement, individual imprisonment, exclusion from government funded healthcare programs, such as Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional integrity reporting and oversight obligations, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Our future growth may depend, in part, on our ability to operate in foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future profitability may depend, in part, on our ability to commercialize our product candidates in foreign markets for which we may rely on collaboration with third parties. We are not permitted to market or promote any of our product candidates before we receive marketing approval from the applicable regulatory authority in that foreign market, and we may never receive such marketing approval for any of our product candidates. To obtain marketing approval in many foreign countries, we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions. If we obtain approval of our product candidates and ultimately commercialize our product candidates in foreign markets, we would be subject to additional risks and uncertainties, including:

- our customers' ability to obtain reimbursement for our product candidates in foreign markets;
- our inability to directly control commercial activities because we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;
- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training;
- reduced protection of intellectual property rights in some foreign countries;
- the existence of additional potentially relevant third-party intellectual property rights;
- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Foreign sales of our product candidates could also be adversely affected by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs.

Our internal information technology systems, or those of our third-party CROs, contractors, consultants or others who process sensitive information on our behalf, may fail or suffer security breaches, loss or leakage of data and other compromises, any of which could result in a material disruption of our product candidates' development programs, compromise sensitive information related to our business or prevent us from accessing such information, expose us to liability or otherwise adversely affect our business.*

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. In the ordinary course of business, we may collect, store, transmit, or otherwise process information (including but not limited to intellectual property, proprietary business information and personal data of employees, clinical trial participants and others). It is critical that we do so in a secure manner to maintain the confidentiality, integrity and availability of such information. We also have outsourced certain of our operations to third parties, and as a result we manage a number of third-parties who have access to our information.

Given our (and that of our third-party CROs, contractors, consultants or others who process sensitive information on our behalf) information technology systems' size and complexity and the increasing amounts of information that they maintain, these systems are potentially vulnerable to breakdown, damage or disruptions caused by several potential sources, such as corruption, system malfunction, natural disasters, public health epidemics (such as the COVID-19 pandemic), terrorism, war, telecommunication and electrical failures, fraudulent activity, cyber-attacks by sophisticated nation-state and nation-state supported actors, as well as security breaches from inadvertent or intentional actions (such as theft or error) by our employees, contractors, consultants, business partners, and/or other third parties, or from cyber-attacks by malicious third parties (including the deployment of harmful malware (such as malicious code, viruses and worms), phishing attacks, denial-of-service attacks, social engineering schemes and other means that affect service reliability and threaten the confidentiality, integrity and availability of information), which may compromise our system infrastructure as well as lead to unauthorized access, disclosure or acquisition of information. Similarly, ransomware attacks, including those perpetrated by organized criminal 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 impacts 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. The techniques used to sabotage or to obtain unauthorized access to our information technology systems or those upon whom we rely to process our information change frequently, and we have not always been able in the past and may be unable in the future to anticipate such techniques or implement adequate preventative measures or to stop security breaches in all instances. The recovery systems, security protocols, network protection mechanisms and other security measures that we have integrated into our information technology systems, which are designed to protect against, detect and minimize security breaches, may not be adequate to prevent or detect service interruption, system failure or data loss. Third parties may also attempt to and successfully exploit vulnerabilities in, or obtain unauthorized access to, platforms, systems, networks and/or physical facilities utilized by us or our third-party CROs, contractors, consultants or others upon whom we rely. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, and/or inappropriate disclosure of, inappropriate access to information, or other compromise, we could incur liability and reputational damage and the further development and commercialization of our drug candidates could be delayed.

We cannot assure you that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems or other cyber incidents that could have a material adverse effect upon our reputation, business, operations or financial condition. For example, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs and the development of our product candidates could be delayed. In addition, the loss of clinical trial data for our product candidates could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Furthermore, significant disruptions of our or our vendors' information technology systems or security breaches could result in the loss, misappropriation and/or unauthorized access, use, or disclosure of, or the prevention of access to, information (including trade secrets or other intellectual property, proprietary business information and personal data), which could result in financial, legal, business and reputational harm to us.

We may be required to comply with laws, regulations, rules, industry standards, and other legal obligations that require us to maintain the security of personal data. We may also have contractual and other legal obligations to notify collaborators, our clinical trial participants, or other relevant stakeholders of security breaches. Failure to prevent or mitigate cyberattacks could result in unauthorized access to data, including personal data. Most jurisdictions have enacted laws requiring companies to notify individuals, regulatory authorities, and others of security breaches involving certain types of data. Such disclosures are costly, could lead to negative publicity, may cause our collaborators or other relevant stakeholders to lose confidence in the effectiveness of our security measures and require us to expend significant capital and other resources to respond to and/or alleviate problems caused by the actual or perceived security breach. In addition, the costs to respond to a cybersecurity event or to mitigate any identified security vulnerabilities could be significant, including costs for remediating the effects of such an event, paying a ransom, restoring data from backups, and conducting data analysis to determine what data may have been affected by the breach. In addition, our efforts to contain or remediate a security breach or any vulnerability exploited to cause a breach may be unsuccessful, and efforts and any related failures to contain or remediate them could result in interruptions, delays, harm to our reputation, and increases to our insurance coverage.

In addition, litigation resulting from security breaches may adversely affect our business. Unauthorized access to our information technology systems could result in litigation with our collaborators, our clinical trial participants, or other relevant stakeholders. These proceedings could force us to spend money in defense or settlement, divert management's time and attention, increase our costs of doing business, or adversely affect our reputation. We could be required to fundamentally change our business activities and practices in response to such litigation, which could have an adverse effect on our business. If a security breach were to occur and the confidentiality, integrity or availability of our data or the data of our collaborators were disrupted, we could incur significant liability, which could negatively affect our business and damage our reputation.

Further, failures or significant downtime of our information technology or telecommunication systems or those used by our third-party service providers could cause significant interruptions in our operations and adversely impact the confidentiality, integrity and availability of sensitive or confidential information, including preventing us from conducting clinical trials, tests or research and development activities and preventing us from managing the administrative aspects of our business.

We may not have adequate insurance coverage.*

We may not have adequate insurance coverage or otherwise protect us from, or adequately mitigate, liabilities or damages. The successful assertion of one or more large claims against us that exceeds our available insurance coverage, or results in changes to our insurance policies (including premium increases or the imposition of large deductible or co-insurance requirements), could have an adverse effect on our business. In addition, we cannot be sure that our existing insurance coverage and coverage for errors and omissions will continue to be available on acceptable terms or that our insurers will not deny coverage as to any future claim.

We are subject to stringent and changing privacy and information security laws, regulations, standards, policies and contractual obligations related to data privacy and security. Our actual or perceived failure to comply with such data privacy and security obligations could lead to government enforcement actions (which could include civil or criminal fines or penalties), a disruption of our clinical trials or commercialization of our products, private litigation, changes to our business practices, increased costs of operations, and adverse publicity that could otherwise negatively affect our operating results and business. Compliance or the failure to comply with such obligations could increase the costs of our products, could limit their use or adoption, and could otherwise negatively affect our operating results and business.*

Regulation of data (including personal data) is evolving, as federal, state, and foreign governments continue to adopt new, or modify existing, laws and regulations addressing data privacy and security, and the collection, processing, storage, transfer, and use of data. These new or proposed laws and regulations are subject to differing interpretations and may be inconsistent among jurisdictions, and guidance on implementation and compliance practices are often updated or otherwise revised, which adds to the complexity of processing personal data. Moreover, we are subject to the terms of our privacy and security policies, representations, certifications, standards, publications, contracts and other obligations to third parties related to data privacy, security and processing. These and other requirements could require us or our collaborators to incur additional costs to achieve compliance, limit our competitiveness, necessitate the acceptance of more onerous obligations in our contracts, restrict our ability to use, store, transfer, and process data, impact our or our collaborators' ability to process or use data in order to support the provision of our products, affect our or our collaborators' ability to offer our products in certain locations, cause regulators to reject, limit or disrupt our clinical trial activities, result in increased expenses, reduce overall demand for our products, and make it more difficult to meet expectations of relevant stakeholders.

We and any potential collaborators may be subject to federal, state and foreign data protection laws and regulations including, without limitation, laws that regulate personal data such as health data. For example, in the United States, numerous federal and state laws and regulations, including federal health information privacy laws, state personal information laws (e.g., the California Consumer

Privacy Act of 2018 (“CCPA”)), state data breach notification laws, state health information privacy laws and federal and state consumer protection laws and regulations (e.g., Section 5 of the Federal Trade Commission Act), govern the collection, use, disclosure and protection of health-related and other personal data. These laws and regulations could apply to our operations, the operations of our collaborators, or other relevant stakeholders upon whom we depend. In addition, we may obtain personal data (including health information) from third parties (including research institutions from which we obtain clinical trial data) that are subject to privacy and security requirements under the Health Insurance Portability and Accountability Act (“HIPAA”), as amended by the Health Information Technology for Economic and Clinical Health Act (“HITECH”). Depending on the facts and circumstances, we could be subject to significant penalties if we violate HIPPA. Additionally, we could be subject to criminal penalties if we knowingly obtain, use, or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

In addition, the CCPA became effective on January 1, 2020. The CCPA gives California residents expanded rights to access and delete their personal data, opt out of certain personal data sharing and receive detailed information about how their personal data is used. The CCPA requires covered businesses to provide new disclosures to California residents. The CCPA provides for civil penalties for violations (up to $7,500 per violation), as well as a private right of action for data breaches that is expected to increase data breach litigation. Although there are limited exemptions for clinical trial data and the CCPA’s implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future, the CCPA may increase our compliance costs and potential liability. It is anticipated that the CCPA will be expanded on January 1, 2023, when the California Privacy Rights Act of 2020 (“CPRA”) becomes operative. The CPRA will, among other things, give California residents the ability to limit use of certain sensitive information, establish restrictions on the retention of personal data, expand the types of data breaches subject to the CCPA’s private right of action and establish a new California Privacy Protection Agency to implement and enforce the new law. In addition, other states have enacted or proposed data privacy laws. For example, Virginia recently passed its Consumer Data Protection Act and Colorado recently passed the Colorado Privacy Act, both of which differ from the CPRA and go into effect in 2023. These laws demonstrate our vulnerability to the evolving regulatory environment related to personal data. As we expand our operations, these and similar laws may increase our compliance costs and potential liability.

Foreign data protection laws, such as, without limitation, the European Union’s (“EU”) General Data Protection Regulation (“GDPR”) and EU member state implementing legislation, may also apply to health-related and other personal data that we process, including, without limitation, personal data relating to clinical trial participants. European data protection laws impose strict obligations on the ability to process health-related and other personal data of European data subjects, including in relation to security (which requires the adoption of administrative, physical and technical safeguards designed to protect such information), collection, use and transfer or personal data. European data protection laws may affect our use, collection, analysis, and transfer (including cross-border transfer) of such personal data. These include, without limitation, several requirements relating to transparency related to communications with data subjects regarding the processing of their personal data, obtaining the consent of the individuals to whom the personal data relates, limitations on the retention of personal data, increased requirements pertaining to health data, establishing a legal basis for processing, notification of data processing obligations or security incidents to the competent national data protection authorities and/or data subjects, the security and confidentiality of the personal data, various rights that data subjects may exercise with respect to their personal data, and strict rules and restrictions on the transfer of personal data outside of Europe (including from the European Economic Area (“EEA”)), Switzerland and United Kingdom (“UK”).

European data protection laws prohibit, without an appropriate legal basis, the transfer of personal data to countries outside of Europe, such as to the United States, which are not considered relevant authorities to provide an adequate level of data protection. A decision by the Court of Justice of the European Union, or the “Schrems II” ruling, invalidated the EU-U.S. Privacy Shield Framework, and raised questions about whether the European Commission’s Standard Contractual Clauses (“SCCs”) one of the primary alternatives to the Privacy Shield, can lawfully be used for personal data transfers from Europe to the United States or most other countries. Similarly, the Swiss Federal Data Protection and Information Commissioner opined that the Swiss-U.S. Privacy Shield is inadequate for transfers of personal data from Switzerland to the U.S. The UK, whose data protection laws are similar to those of the EU, has similarly determined that the EU-U.S. Privacy Shield is not a valid mechanism for lawfully transferring personal data from the UK to the United States. Use of the SCCs must now be assessed on a case-by-case basis taking into account the legal regime applicable in the destination country, in particular, applicable surveillance laws and rights of individuals and additional measures and/or contractual provisions may need to be put in place. However, the nature of these additional measures is currently uncertain. Additionally, the European Commission adopted new SCCs that will repeal the SCCs adopted under the Data Protection Directive. This means we may need to update our contracts that involve the transfer of personal data outside of the EEA to the new SCCs. As supervisory authorities issue further guidance on personal data export mechanisms, including on the new SCCs, and/or start taking enforcement action, our compliance costs could increase, we may be subject to complaints and/or regulatory investigations or fines, and/or if we are otherwise unable to transfer personal data between and among countries and regions in which we conduct clinical trials, this could negatively impact our business.

Further, the UK’s decision to leave the EU, often referred to as Brexit, and ongoing developments in the UK have created uncertainty regarding data protection regulation in the UK. Following December 31, 2020, and the expiry of transitional arrangements between the UK and EU, the data protection obligations of the GDPR continue to apply to UK-related Processing of personal data in substantially unvaried form under the so-called ‘UK GDPR’ (i.e., the GDPR as it continues to form part of UK law by virtue of section 3 of the EU (Withdrawal) Act 2018, as amended). However, going forward, there is increasing risk for divergence in application, interpretation and enforcement of the data protection laws as between the UK and EEA. Furthermore, the relationship between the UK and the EEA in relation to certain aspects of data protection law remains uncertain, including with respect to regulation of data transfers between EU member states and the UK. On June 28, 2021, the European Commission issued an adequacy decision under the GDPR

which allows transfers (other than those carried out for the purposes of United Kingdom immigration control) of personal data from the EEA to the UK to continue without restriction for a period of four years ending June 27, 2025. After that period, the adequacy decision may be renewed, but, only if the UK continues to ensure an adequate level of data protection. During these four years, the European Commission will continue to monitor the legal situation in the UK and could intervene at any point if the UK deviates from the level of data protection in place at the time of issuance of the adequacy decision. If the adequacy decision is withdrawn or not renewed, transfers of personal data from the EEA to the UK will require a valid 'transfer mechanism' and we may be required to implement new processes and put new agreements in place, such as SCCs, to enable transfers of personal data from the EEA to the UK to continue, which could disrupt our operations.

The increase of foreign privacy and security legal frameworks with which we must comply, increases our compliance burdens and exposure to substantial fines and penalties for non-compliance. For example, under the GDPR, entities that violate the GDPR can face fines of up to the greater of 20 million Euros or 4% of their worldwide annual turnover (revenue). Additionally, regulators could prohibit our use of personal data subject to the GDPR. The GDPR has increased our responsibility and potential liability in relation to personal data that we process, requiring us to put in place additional mechanisms to comply with the GDPR and other foreign data protection requirements.

We publish privacy policies and other documentation regarding our collection, processing, use and disclosure of personal data, and/or other confidential information. Although we endeavor to comply with our published policies and documentation, we may at times fail to do so or may be perceived to have failed to do so. Moreover, despite our efforts, we may not be successful in achieving compliance if our employees or contractors fail to comply with our published policies and documentation. Such failures can subject us to potential foreign, local, state and federal action if they are found to be deceptive, unfair, or misrepresentative of our actual practices.

Compliance with U.S. federal and state as well as foreign data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data, or in some cases, impact our ability to operate in certain jurisdictions. Failure, or perceived failure, to comply with federal, state, and foreign data protection laws and regulations could result in government enforcement actions (which could include civil or criminal penalties, fines or penalties), private litigation, a diversion of management attention, adverse publicity and negative effects on our operating results and business. There can be no assurance that the limitations of liability in our contracts would be enforceable or adequate or would otherwise protect us from liabilities or damages if we fail to comply with applicable data protection laws, privacy policies or data protection obligations related to information security or security breaches. Moreover, clinical trial participants or subjects about whom we or our collaborators obtain information, as well as the providers who share this information with us, may limit our ability to use and disclose the information. Claims that we have violated individuals' privacy rights, failed to comply with data protection laws, contracts, privacy notices, or breached other obligations, even if we are not found liable, could be expensive and time consuming to defend and could result in adverse publicity that could harm our business. Compliance with data protection laws may be time consuming, require additional resources and could result in increased expenses, reduce overall demand for our products and make it more difficult to meet expectations of or commitments to our relevant stakeholders.

Any of these matters could adversely affect materially our business, financial condition, or operational results.

We or the third parties upon whom we depend may be adversely affected by earthquakes, fires, health pandemics or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Our headquarters and main research facility are located in the greater San Diego area, which in the past has experienced severe earthquakes and fires. If these earthquakes, fires, other natural disasters, health pandemics or epidemics, terrorism and similar unforeseen events beyond our control, including for example the ongoing COVID-19 pandemic, prevented us from using all or a significant portion of our headquarters or research facility, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. We do not have a disaster recovery or business continuity plan in place and may incur substantial expenses as a result of the absence or limited nature of our internal or third party service provider disaster recovery and business continuity plans, which, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business. Furthermore, integral parties in our supply chain are operating from single sites, increasing their vulnerability to natural disasters or other sudden, unforeseen and severe adverse events. If such an event were to affect our supply chain, it could have a material adverse effect on our ability to conduct our clinical trials, our development plans and business.

Our ability to use our net operating loss carryforwards and certain other tax attributes to offset future taxable income or taxes may be limited.*

We have incurred substantial losses during our history and do not expect to become profitable in the near future, and we may never achieve profitability. Unused losses for tax years beginning on or prior to December 31, 2017 will carry forward to offset future taxable income, if any, until such unused losses expire. Under legislation enacted in 2017, informally titled the Tax Cuts and Jobs Act, as modified by the Coronavirus Aid, Relief and Economic Security Act ("the CARES Act"), unused federal losses generated in tax years beginning after December 31, 2017 may be carried forward indefinitely but the deductibility of such federal net operating loss carryforwards ("NOLs") in tax years beginning after December 31, 2020 is limited to 80% of current year taxable income. Also, under the CARES Act, NOLs arising in 2018, 2019 and 2020 can be carried back five years. Many states have similar laws. In addition, both our current and our future unused losses and other tax attributes may be subject to limitation under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended ("the Code") if we undergo an "ownership change," generally defined as a greater than 50 percentage point change (by value) in our equity ownership by certain stockholders over a three-year period. We have not completed a Section 382 study to assess whether an ownership change has occurred or whether there have been multiple ownership changes since

our formation due to the complexity and cost associated with such a study and the fact that there may be additional such ownership changes in the future. As a result, if we earn net taxable income, our NOLs generated in tax years beginning before January 1, 2018 may expire prior to being used, our NOLs generated in tax years beginning after December 31, 2017 will be subject to a percentage limitation in tax years beginning after December 31, 2020 and, if we undergo an ownership change (or if we previously underwent an ownership change), our ability to use all of our pre-change NOLs and other pre-change tax attributes (such as research tax credits) to offset our post-change income or taxes may be limited. Similar provisions of state tax law may also apply to limit our use of accumulated state tax attributes. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California imposes limits on the usability of California state net operating losses and certain California tax credits to offset taxable income and taxes, respectively, in tax years beginning after December 31, 2019 and before January 1, 2023. As a result, even if we attain profitability, we may be unable to use all or a material portion of our NOLs and other tax attributes, which could adversely affect our future cash flows.

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

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, product liability claims may result in:

- delay or termination of clinical trials;
- decreased demand for any product candidates or products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial subjects;
- initiation of investigations by regulators;
- significant costs to defend the related litigation and diversion of management's time and our resources;
- substantial monetary awards to study subjects or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

We currently hold $10 million in aggregate product liability insurance coverage, which may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage as our product candidates advance through clinical trials and if we successfully commercialize any products. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Changes in healthcare law and implementing regulations, as well as changes in healthcare policy, may impact our business in ways that we cannot currently predict, and may have a significant adverse effect on our business and results of operations.*

In the United States and some foreign jurisdictions, there have been, and continue to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect our ability to profitably sell any product candidates for which we obtain marketing approval. Among policy makers and payors in the United States and elsewhere, including in the EU, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

The Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010 (collectively, the "Affordable Care Act") substantially changed the way healthcare is financed by both the government and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act, among other things: (i) introduced a new average manufacturer price definition for drugs and biologics that are inhaled, infused, instilled, implanted or injected and not generally dispensed through retail community pharmacies; (ii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and expanded rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well; (iii) established a branded prescription drug fee that pharmaceutical manufacturers of branded prescription drugs must pay to the federal government; (iv) expanded the list of covered entities eligible to participate in the 340B drug pricing program by adding new entities to the program; (v) established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer point-of-sale discounts (which through subsequent legislative amendments, was increased to 70% from 50%) off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; (vi) extended manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations; (vii) expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability; (viii) created a licensure framework for follow on biologic products; and (ix) established a Center for Medicare and Medicaid Innovation at the Centers for Medicare & Medicaid Services (CMS) to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been executive, judicial and Congressional challenges to certain aspects of the Affordable Care Act. For example, the Tax Cuts and Jobs Act included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." Further, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the Affordable Care Act's-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminated the health insurer tax. On June 17, 2021 the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the Affordable Care Act is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the Affordable Care Act will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the Affordable Care Act marketplace, which began on February 15, 2021 and remained open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the Affordable Care Act. Additionally, on March 11, 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 average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. It is possible that the Affordable Care Act will be subject to judicial or Congressional challenges in the future. It is unclear how any such challenges and the healthcare reform measures of the Biden administration will impact the Affordable Care Act and our business.

Other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year pursuant to the Budget Control Act of 2011 and subsequent laws, which began in 2013 and will remain in effect through 2030, unless additional Congressional action is taken. However, COVID-19 relief legislation suspended the 2% Medicare sequester from May 1, 2020 through December 31, 2021. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. In addition, Congress is considering additional health reform measures as part of the budget reconciliation process.

New laws may result in additional reductions in Medicare and other healthcare funding, which may materially adversely affect customer demand and affordability for our products and, accordingly, the results of our financial operations. Also, there has been heightened governmental scrutiny recently over the manner in which drug manufacturers set prices for their marketed products, which have resulted in several Congressional inquiries and proposed federal legislation, as well as state efforts, designed to, among other things, bring more transparency to product 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 drug products. At the federal level, the Trump administration used several means to propose or implement drug pricing reform, including through federal budget proposals, executive orders and policy initiatives. For example, on July 24, 2020 and September 13, 2020, the Trump administration announced several executive orders related to prescription drug pricing that attempt to implement several of the administration's proposals. The FDA also released a final rule, effective November 30, 2020, implementing a portion of the importation executive order providing guidance for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, the Department of Health and Human Services ("HHS") finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The implementation of the rule has been delayed by the Biden administration from January 1, 2022 to January 1, 2023 in response to ongoing litigation. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a new safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers, the implementation of which have also been delayed until January 1, 2023. On November 20, 2020, CMS issued an interim final rule implementing President Trump's Most Favored Nation ("MFN") executive order, which would tie Medicare Part B payments for certain physician-administered drugs to the lowest price paid in other economically advanced countries, effective January 1, 2021. As a result of litigation challenging the MFN model, on August 10, 2021, CMS published a proposed rule that seeks to rescind the MFN model interim final rule. 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, 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. No legislation or administrative actions have been finalized to implement these principles. At the state level, individual states in the United States are increasingly active in passing legislation and implementing 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 these and other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and lower reimbursement, and in additional downward pressure on the price that we receive for any approved product. Further, it is possible that additional governmental action is taken in response to the COVID-19 pandemic. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our drugs, once marketing approval is obtained.

In the EU, coverage and reimbursement status of any product candidates for which we obtain regulatory approval are provided for by the national laws of EU Member States. The requirements may differ across the EU Member States. Also at a national level, actions have been taken to enact transparency laws regarding payments between pharmaceutical companies and health care professionals.

We will be subject to applicable fraud and abuse, transparency, government price reporting and other healthcare laws and regulations. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.*

Healthcare providers and third-party payors will play a primary role in the recommendation and prescription of any future product candidates for which we obtain marketing approval. Our current and future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may affect the business or financial arrangements and relationships through which we would research, market, sell and distribute our products. Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. The laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, any person or entity from knowingly and willfully soliciting, receiving, offering or paying any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of an item or service reimbursable, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. The term "remuneration" has been broadly interpreted to include anything of value. The Anti-Kickback Statute has also been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other the other hand. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the federal civil and criminal false claims laws, such as the False Claims Act ("FCA"), and civil monetary penalty laws, which imposes significant penalties and can be enforced by private citizens through civil qui tam actions, prohibits individuals or entities from, among other things, knowingly presenting, or causing to be presented, false, fictitious or fraudulent claims for payment or approval by the federal government, and knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim, or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government. For example, pharmaceutical companies have been prosecuted under the FCA in connection with their alleged off-label promotion of drugs, purportedly concealing price concessions in the pricing information submitted to the government for government price reporting purposes, and allegedly providing free product to customers with the expectation that the customers would bill federal health care programs for the product. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes "any request or demand" for money or property presented to the U.S. government. In addition, manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to "cause" the submission of false or fraudulent claims. Criminal prosecution is also possible for making or presenting a false, fictitious or fraudulent claim to the federal government. Government enforcement agencies and private whistleblowers have investigated pharmaceutical companies for or asserted liability under the FCA for a variety of alleged promotional and marketing activities, such as providing free product to customers with the expectation that the customers would bill federal programs for the product, providing consulting fees and other benefits to physicians to induce them to prescribe products, engaging in promotion for "off-label" uses, and submitting inflated best price information to the Medicaid Rebate Program. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the FCA;
- HIPAA, among other things, imposes criminal liability for executing or attempting to execute a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and creates federal criminal laws that prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of or payment for healthcare benefits, items or services. Like the Anti-Kickback Statute, the Affordable Care Act amended the intent standard for certain healthcare fraud statutes under HIPAA such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by HITECH and its implementing regulations, which imposes privacy, security and breach reporting obligations with respect to individually identifiable health information upon entities subject to the law, such as health plans, healthcare clearinghouses and certain healthcare providers and their respective business associates that perform services for them that involve individually identifiable health information, as well as their covered subcontractors. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys; general new authority to file civil actions for damages or injunctions in U.S. federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions;
- federal and state consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- the federal transparency requirements under the Physician Payments Sunshine Act, which requires, among other things, certain manufacturers of drugs, devices, biologics and medical supplies reimbursed under Medicare, Medicaid, or the Children's Health Insurance Program to annually report to HHS information related to payments and other transfers of value

provided to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and physician ownership and investment interests, including such ownership and investment interests held by a physician's immediate family members. Beginning in 2022, applicable manufacturers also will be required to report such information regarding its payments and other transfers of value during the previous year to physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives; and

- analogous state and foreign laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state and foreign laws that require pharmaceutical companies to implement compliance programs, comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, track and report gifts, compensation and other remuneration provided to physicians, other health care providers and other health care entities, or drug pricing, and/or ensure the registration and compliance of sales personnel and other federal, state and foreign laws that govern the privacy and security of health information or personally identifiable information in certain circumstances, including state health information privacy and data breach notification laws which govern the collection, use, disclosure and protection of health-related and other personal information, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus requiring additional compliance efforts.

We have entered into consulting and scientific advisory board arrangements with physicians and other healthcare providers, some of whom are compensated with stock options including some who could influence the use of our product candidates, if approved. Because of the complex and far-reaching nature of these laws, regulatory agencies may view these transactions as prohibited arrangements that must be restructured, or discontinued, or for which we could be subject to other significant penalties. We could be adversely affected if regulatory agencies interpret our financial relationships with providers who may influence the ordering of and use our product candidates, if approved, to be in violation of applicable laws.

The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies, healthcare providers and other third parties, including charitable foundations, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. Responding to investigations can be time- and resource-consuming and can divert management's attention from the business. Any such investigation or settlement could increase our costs or otherwise have an adverse effect on our business.

Ensuring that our business arrangements with third parties comply with applicable healthcare laws and regulations will likely be costly. If our operations are found to be in violation of any of these laws or any other current or future governmental laws and regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from government funded healthcare programs, such as Medicare and Medicaid, contractual damages, reputational harm, diminished profits and future earnings, additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, and the curtailment or restructuring of our operations, any of which could substantially disrupt our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

We are subject to certain U.S. and certain foreign anti-corruption, anti-money laundering, export control, sanctions and other trade laws and regulations. We can face serious consequences for violations.

U.S. and foreign anti-corruption, anti-money laundering, export control, sanctions and other trade laws and regulations, collectively, Trade Laws, prohibit, among other things, companies and their employees, agents, CROs, legal counsel, accountants, consultants, contractors and other partners from authorizing, promising, offering, providing, soliciting, or receiving directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. Violations of Trade Laws can result in substantial criminal fines and civil penalties, imprisonment, the loss of trade privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities and other organizations. We also expect our non-U.S. activities to increase over time. We expect to rely on third parties for research, preclinical studies and clinical trials and/or to obtain necessary permits, licenses, patent registrations and other marketing approvals. We can be held liable for the corrupt or other illegal activities of our personnel, agents, or partners, even if we do not explicitly authorize or have prior knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences.

Requirements associated with being a public company will increase our costs significantly, as well as divert significant company resources and management attention.

We are subject to the reporting requirements of the Exchange Act, or the other rules and regulations of the SEC, or any securities exchange relating to public companies. Sarbanes-Oxley, as well as rules subsequently adopted by the SEC, and The Nasdaq Global Market to implement provisions of Sarbanes-Oxley, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted additional rules and regulations in these areas, such as mandatory "say on pay" voting requirements that will apply to us when we cease to be an emerging growth company. Stockholder activism, the current political environment and the current high level of government intervention and

regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate. Compliance with the various reporting and other requirements applicable to public companies requires considerable time and attention of management. We cannot assure you that we will satisfy our obligations as a public company on a timely basis.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. In addition, as a public company, it may be more difficult or more costly for us to obtain certain types of insurance, including directors' and officers' liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified personnel to serve on our board of directors, our board committees or as executive officers.

We may also be subject to more stringent state law requirements. For example, on September 30, 2018, California Governor Jerry Brown signed into law Senator Bill 826, which generally requires public companies with their principal executive office in California to have a minimum number of females on the company's board of directors. Each public company with principal executive offices in California is required to have at least one female on its board of directors, and by December 31, 2021, will be required to have at least two females on its board of directors if the company has at least five directors, and at least three females on its board of directors if the company has at least six directors. Additionally, on September 30, 2020, California enacted AB 979, requiring public companies with their principal executive office in California to each have at least one director from an underrepresented community based on ethnicity and sexual orientation by December 31, 2021. By December 31, 2022, each of these companies will be required to have at least two directors from such underrepresented communities if such company has more than four but fewer than nine directors, or at least three directors from underrepresented communities if the company has nine or more directors. The new law does not provide a transition period for newly listed companies. The current composition of our board of directors includes two female directors and one director from underrepresented communities. In order to meet the requirements of applicable California law, we expect to onboard the requisite number of female and diverse directors. If we fail to comply with these new laws, we could be fined by the California Secretary of State, with a $100,000 fine for the first violation and a $300,000 fine for each subsequent violation, and our reputation may be adversely affected. We cannot assure that we can recruit, attract and/or retain qualified members of the board and meet gender and diversity quotas as required by California law (provided that such laws are not repealed before the compliance deadlines), which may cause certain investors to divert their holdings in our securities and expose us to financial penalties and/or reputational harm.

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

We, and the third parties with whom we share our facilities, are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Each of our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Each of our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. We could be held liable for any resulting damages in the event of contamination or injury resulting from the use of hazardous materials by us or the third parties with whom we share our facilities, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

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

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research and development. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Risks Related to our Common Stock

The trading price of our common stock has been, and in the future, may be volatile and fluctuate substantially or may decline regardless of our operating performance, which could result in substantial losses.*

Prior to the completion of our IPO, there was no public market for our common stock. We cannot assure you that an active or liquid market in our common stock will develop, or if it does develop, it may not be sustainable. Our stock price has been, and in the future, may be volatile. For example, the market price of our common stock declined significantly as a result of the announcement we made on October 24, 2021. The stock market in general and the market for smaller pharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- limited daily trading volume resulting in the lack of a liquid market
- our operating performance and the performance of other similar companies;

- our ability to enroll subjects in our ongoing and planned clinical trials;
- results from our ongoing clinical trials and future clinical trials with our current and future product candidates or of our competitors;
- changes in our projected operating results that we provide to the public, our failure to meet these projections or changes in recommendations by securities analysts that elect to follow our common stock;
- regulatory or legal developments in the United States and other countries, including changes in the structure of healthcare payment systems;
- the level of expenses related to future product candidates or clinical development programs;
- our ability to achieve product development goals in the timeframe we announce;
- announcements of clinical trial results, regulatory developments, equity offerings, debt financings, acquisitions, strategic alliances or significant agreements by us or by our competitors;
- the success or failure of our efforts to acquire, license or develop additional product candidates;
- recruitment or departure of key personnel;
- the economy as a whole and market conditions in our industry;
- actual or anticipated changes in estimates as to financial results, development timelines, or recommendations by securities analysts;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- trading activity by a limited number of stockholders who together beneficially own a significant amount of our outstanding common stock;
- the expiration of market standoff or contractual lock-up agreements;
- the size of our market float; and
- any other factors or events, including those described in this “Risk Factors” section.

In addition, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many life sciences companies. Stock prices of many biopharmaceutical companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. For example, the ongoing COVID-19 pandemic has negatively affected the stock market and investor sentiment and has resulted in significant volatility. The price of our common stock may be disproportionately affected as investors may favor traditional profit-making industries and companies during times of market uncertainty and instability. In the past, stockholders have filed securities class action litigation following periods of market volatility. If we were to become involved in securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business and adversely affect our business.

Raising additional capital may cause dilution to our stockholders restrict our operations or require us to relinquish rights to our technologies or product candidates.*

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, additional borrowings under our loan agreement, collaborations and other similar arrangements. In October 2021, we filed a shelf registration statement on Form S-3 (Registration No. 333-260023) that allows us to sell up to an aggregate of $150.0 million of our common stock, preferred stock, debt securities and/or warrants, which includes a prospectus covering the issuance and sale of up to $50.0 million of common stock pursuant to an at-the-market (“ATM”) offering program. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Additional debt financing, if available, may involve agreements that include covenants further limiting or restricting our ability to take specific actions beyond those contained in our existing loan agreement, such as further limitations on our ability to incur additional debt, make capital expenditures or declare dividends.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

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

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. We currently have research coverage from a limited number of securities or industry analysts. If no or only very few securities analysts commence coverage of us, or if industry analysts cease coverage of us, the trading price for our common stock would be negatively affected. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our common stock price and trading volume to decline.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We designed our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make any related party transaction disclosures. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

We are an "emerging growth company," and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the JOBS Act and we intend to take advantage of some of the exemptions from reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- not being required to hold a non-binding advisory vote on executive compensation or obtain stockholder approval of any golden parachute payments not previously approved.

In addition, as an "emerging growth company" the JOBS Act allows us to delay adoption of new or revised accounting pronouncements applicable to public companies until such pronouncements are made applicable to private companies. We have not elected to use this extended transition period under the JOBS Act.

We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company. We will remain an emerging growth company until the earlier of (a) December 31, 2025, (b) the last day of the fiscal year in which we have total annual gross revenue of at least $1.07 billion or (c) the date on which we first qualify as a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

We do not intend to pay dividends for the foreseeable future.

We have never declared nor paid cash dividends on our capital stock. We currently intend to retain any future earnings to finance the operation and expansion of our business, and we do not expect to declare or pay any dividends in the foreseeable future. In addition, the terms of our loan agreement with K2 preclude us from paying cash dividends. Consequently, stockholders must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment.

The concentration of our stock ownership will likely limit your ability to influence corporate matters, including the ability to influence the outcome of director elections and other matters requiring stockholder approval.

Our executive officers and directors, combined with our stockholders who owned more than 5% of our outstanding capital stock beneficially own shares representing a significant percentage of our common stock. As a result, these stockholders, acting together, will have significant influence over all matters that require approval by our stockholders, including the election of directors and approval of significant corporate transactions. Corporate actions might be taken even if other stockholders oppose them. This concentration of ownership might also have the effect of delaying or preventing a change of control of our company that other stockholders may view as beneficial.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make a merger, tender offer or proxy contest difficult, thereby depressing the trading price of our common stock.

Provisions of our amended and restated certificate of incorporation and amended and restated bylaws may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in

which stockholders might otherwise receive a premium for their shares or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock. Among other things, our amended and restated certificate of incorporation and amended and restated bylaws:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate (including the right to approve an acquisition or other change in our control);
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that the board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66 2/3% of the voting power of all of our then outstanding common stock;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- divide our board of directors into three classes;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner and also specify requirements as to the form and content of a stockholder's notice;
- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose);
- provide that special meetings of our stockholders may be called only by the chairman of the board, our Chief Executive Officer or by the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- provide that the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom will be the sole and exclusive forum for the following claims or causes of action under the Delaware statutory or common law: (i) any derivative claim or cause of action brought on our behalf; (ii) any claim or cause of action for breach of a fiduciary duty owed by any of our current or former directors, officers or other employees to us or our stockholders; (iii) any claim or cause of action 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 certificate of incorporation or our bylaws (each as may be amended from time to time); (iv) any claim or cause of action seeking to interpret, apply, enforce or determine the validity of our certificate of incorporation or our bylaws (as each may be amended from time to time, including any right, obligation, or remedy thereunder); (v) any claim or cause of action as to which the Delaware General Corporation Law confers jurisdiction on the Court of Chancery of the State of Delaware; and (vi) any claim or cause of action against us or any of our directors, officers or other employees governed by the internal-affairs doctrine, in all cases to the fullest extent permitted by law and subject to the court's having personal jurisdiction over the indispensable parties named as defendants; provided, that, this Delaware forum provision set forth in our of our amended and restated certificate of incorporation and amended and restated bylaws will not apply to claims or causes of action brought to enforce a duty or liability created by the Securities Act of 1933, as amended (the "Securities Act"), or the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction.

Further, our amended and restated certificate of incorporation provides that unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States will be the exclusive forum for resolution of any complaint asserting a cause of action arising under the Securities Act.

The amendment of any of these provisions, with the exception of the ability of our board of directors to issue shares of preferred stock and designate any rights, preferences and privileges thereto, would require approval by the holders of at least 66 2/3% of our then-outstanding common stock.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law, or Section 203. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time. A Delaware corporation may opt out of this provision by express provision in its original certificate of incorporation or by amendment to its certificate of incorporation or bylaws approved by its stockholders. However, we have not opted out of this provision.

These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirors to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including delay or impede a merger, tender offer or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and limit opportunities for you to realize value in a corporate transaction.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for certain disputes between us and our stockholders, which may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) and any appellate court therefrom shall be the sole and exclusive forum for the following claims or causes of action under the Delaware statutory or common law: (i) any derivative claim or cause of action brought on our behalf, (ii) any action claim or cause of action for breach of fiduciary duty owed by any of our current or former directors, officers or other employees to us or our stockholders, (iii) any claim or cause of action 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 certificate of incorporation or bylaws (as each may be amended from time to time); (iv) any claim or cause of action seeking to interpret, apply, enforce or determine the validity of our certificate of incorporation or our bylaws (as each may be amended from time to time, including any right, obligation, or remedy thereunder); (v) any claim or cause of action as to which the Delaware General Corporation Law confers jurisdiction on the Court of Chancery of the State of Delaware and (vi) any claim or cause of action against us or any of our directors, officers or other employees that is governed by the internal-affairs doctrine; provided, that this Delaware forum provision set forth in our amended and restated certificate of incorporation will not apply to claims or causes of action brought to enforce a duty or liability created by the Securities Act or the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction. Further, our amended and restated certificate of incorporation provides that unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States will be the exclusive forum for resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees and may discourage these types of lawsuits. Furthermore, the enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. If a court were to find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions.

We could be subject to securities class action litigation.*

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business. If we experience a decline in our stock price, we could face securities class action lawsuits.

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

Not applicable.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

Furnish the exhibits required by Item 601 of Regulation S-K (§ 229.601 of this chapter).

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-39512) filed with the SEC on September 18, 2020).
3.2	Amended and Restated Bylaws of the Company (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-39512) filed with SEC on September 18, 2020).
4.1	Form of Common Stock Certificate of the Registrant (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-248292), filed with the SEC on September 9, 2020).
4.2	Amended and Restated Investor Rights Agreement, dated August 26, 2019, by and among the Registrant and certain of its stockholders (incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-248292), filed with the SEC on August 24, 2020).

4.3	Warrant to Purchase Preferred Stock, dated August 27, 2019, issued to K2 HealthVentures Equity Trust LLC (incorporated by reference to Exhibit 4.3 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-248292), filed with the SEC on August 24, 2020).
4.4	Warrant to Purchase Common Stock, dated October 1, 2021, issued to K2 HealthVentures Equity Trust LLC.
10.1†	Second Amendment to Loan and Security Agreement, dated October 1, 2021, by and between the Registrant and K2 HealthVentures LLC and any other lender from time to time party thereto, K2 HealthVentures LLC as administrative agent.
31.1	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Principal Executive Officer and Principal Financial Officer Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350.
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

† Certain portions of this exhibit (indicated by "[***]") have been omitted because they are both (i) not material and (ii) the type of information that the Company treats as private or confidential.

SIGNATURES

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

Metacrine, Inc.

Date: November 12, 2021

By: /s/ Preston Klassen
Preston Klassen, M.D.
President and Chief Executive Officer
(Principal Executive Officer)

Date: November 12, 2021

By: /s/ Patricia Millican
Patricia Millican
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 4.4

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE COMPANY, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

WARRANT TO PURCHASE COMMON STOCK

Company:	METACRINE, INC., a Delaware corporation.
Class of Stock:	Common Stock.
Number of Shares:	An amount equal to (i) the greater of (a) $375,000 and (b) 2.5% multiplied by the aggregate original principal amount of the Refinancing Term Loans made pursuant to the Loan Agreement divided by (ii) the Warrant Price as in effect from time to time.
Warrant Price:	$2.86 per share *(subject to adjustment as provided herein)*.
Issue Date:	October 1, 2021.
Expiration Date:	10 years from the Issue Date.
Loan Agreement:	This Warrant to Purchase Common Stock ("**Warrant**") is issued in connection with, and as consideration of the commitments pursuant to, that certain Loan and Security Agreement dated as of August 27, 2019 among the Company and certain other borrowers from time to time party thereto, K2 HEALTHVENTURES LLC, as administrative agent for lenders, ANKURA TRUST COMPANY, LLC, as collateral agent for lenders, K2 HEALTHVENTURES LLC and any other lenders from time to time party thereto, as amended by the First Amendment thereto dated as of March 27, 2020, and as further amended by the Second Amendment thereto dated as of the date hereof (as amended, restated, supplemented or otherwise modified from time to time, the "**Loan Agreement**"). Capitalized terms used herein without definition, shall have the meanings set forth in the Loan Agreement.

This WARRANT TO PURCHASE COMMON STOCK certifies that, for good and valuable consideration, **K2 HEALTHVENTURES EQUITY TRUST LLC** (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, "**Holder**") is entitled to purchase the number of fully paid and non-assessable shares equal to (i) the greater of (a) $375,000 and (b) 2.5% multiplied by the aggregate original principal amount of the Refinancing Term Loans if and when funded pursuant to the Loan Agreement divided by (ii) the Warrant Price (the "**Shares**") of the above-stated class of stock (the "**Class**") of the above-named company (the "**Company**") at the above-stated Warrant Price, all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant.

SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering to the Company the original of this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this

Warrant is being exercised. Thereupon, the Company shall issue to Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

$$X = Y(A-B)/A$$

where:

X = the number of Shares to be issued to Holder;

Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);

A = the Fair Market Value (as determined pursuant to Section 1.3 below) of one Share; and

B = the Warrant Price.

1.3 Fair Market Value. For purposes of this Warrant, the "**Fair Market Value**" shall mean the following:

(a) if the Common Stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a "**Trading Market**"), the fair market value of a Share shall be the closing price or last sale price of a share of Common Stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company; or

(b) if the Common Stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company shall deliver to Holder a certificate or evidence of book entry representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

1.6 Treatment of Warrant at Acquisition.

(a) In the event of an Acquisition (as defined below) in which the consideration to be received by the Company's stockholders consists solely of cash, solely of Marketable Securities (defined below) or a combination of cash and Marketable Securities (a "**Cash/Public Acquisition**"), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 above as to all Shares, then this Warrant shall automatically be deemed to be cashless exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition.

(b) Upon the closing of any Acquisition other than as described in subsection (a) above, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(c) (i) "**Acquisition**" means a transaction or series of transactions involving: (A) a sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company (including the grant of an exclusive license covering all or substantially all of the intellectual property rights of the Company); (B) any consolidation or merger of the Company with or into any other corporation or other entity or person, or any other corporate reorganization or other similar transactions or series of related transactions, other than any such consolidation, merger or reorganization in which the shares of capital stock of the Company immediately prior to such consolidation, merger or reorganization, continue to represent a majority of the voting power of the surviving entity (or, if the surviving entity is a wholly owned subsidiary, its parent) immediately after such consolidation, merger or reorganization; or (C) any

transaction or any sale or other transfer by the stockholders of the Company (in a single transaction or a series of related transactions) in which at least fifty percent (50%) of the Company's outstanding voting power is transferred; provided that an Acquisition shall not include any transaction or series of transactions principally for bona fide equity financing purposes in which cash is received by the Company or any successor or indebtedness of the Company is cancelled or converted or a combination thereof for the purpose of financing the operations and business of the Company.

(ii) "**Marketable Securities**" means securities meeting all of the following requirements: (1) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (2) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in a Trading Market; and (3) following the closing of such Acquisition, Holder would not be restricted from publicly re-selling all of the issuer's shares and/or other securities that would be received by Holder in such Acquisition were Holder to exercise or convert this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition (or any longer period approved in writing by Holder).

SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Class payable in Common Stock or other securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Class by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Class are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Class are reclassified, converted, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series, then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2 shall similarly apply to successive reclassifications, exchanges, combinations, substitutions, replacements or other similar events.

2.3 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.4 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Class and/or number of Shares, the Company, at the Company's expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, class and number of Shares in effect upon the date of such adjustment.

SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, Holder as follows as of the date hereof:

(a) All Shares which may be issued upon the exercise of this Warrant, shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws.

(b) The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of Common Stock (and, if applicable, other securities) as will be sufficient to permit the exercise in full of this Warrant.

3.2 Notice of Certain Events. If the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Class, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

(b) offer for subscription or sale pro rata to the holders of the outstanding shares of the Class any additional shares of any class or series of the Company's stock (other than pursuant to contractual pre-emptive rights);

(c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Class; or

(d) effect an Acquisition or to liquidate, dissolve or wind up;

then, in connection with each such event, the Company shall give Holder:

(1) in the case of the matters referred to in (a) and (b) above, at least five Business Days' prior written notice of the earlier to occur of the effective date thereof or the date on which a record will be taken for such dividend, distribution, or subscription rights (and specifying the date on which the holders of outstanding shares of the Class will be entitled thereto) or for determining rights to vote, if any; and

(2) in the case of the matters referred to in (c) and (d) above at least 20 days' prior written notice of the date when the same will take place (and specifying the date on which the holders of outstanding shares of the Class will be entitled to exchange their shares for the securities or other property deliverable upon the occurrence of such event and copies of all documents to be entered into in connection with such transaction and other information as Holder may require in connection with such transaction and the treatment of this Warrant in connection with such event giving rise to the notice).

If at any time the Company is not required to file quarterly and annual reports with the Securities and Exchange Commission, the Company will also provide information requested by Holder that is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements, including without limitation, quarterly financial statements no later than 45 days of the end of each fiscal quarter of the Company and annual financial statements no later than 150 days of the end of each fiscal year of Company, in each case, in the form as and when delivered to Company's investors, as well as the budget for each fiscal year, when approved by Company's board of directors.

3.3 [Reserved].

3.4 Rule 144 Compliance. The Company shall, at all times prior to the earlier to occur of (i) the date of sale or other disposition by Holder of this Warrant or all Shares issued on exercise of this Warrant, or (ii) the expiration or earlier termination of this Warrant if the Warrant has not been exercised in full or in part on such date, use all commercially reasonable efforts to timely file all reports required under the Exchange Act and otherwise timely take all actions necessary to permit Holder to sell or otherwise dispose of this Warrant and the Shares issued on exercise hereof pursuant to Rule 144 promulgated under the Act ("**Rule 144**") and in effect from time to time. If Holder proposes to sell any Shares upon the exercise of this Warrant in compliance with Rule 144, then, upon Holder's written request to the Company, the Company shall furnish to Holder, within five (5) business days after receipt of such request, a written statement confirming the status of the Company's compliance with the filing and other requirements of Rule 144.

SECTION 4. REPRESENTATIONS, WARRANTIES OF HOLDER.

Holder represents and warrants to the Company as follows as of the date hereof:

4.1 Purchase for Own Account. This Warrant and the Shares to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder's account, not as a nominee or agent, and not with

a view to the public resale or distribution within the meaning of the Act. Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company's business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144.

4.6 No Voting Rights. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant and, following such exercise, Holder shall have voting rights solely with respect to the Shares issued to Holder thereupon.

SECTION 5. MISCELLANEOUS.

5.1 Term and Automatic Exercise Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time on or before 6:00 PM, Pacific Time, on the Expiration Date and shall be void thereafter.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share (or other security issuable upon the exercise hereof) as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares (or such other securities) for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate or evidence of book entry representing the Shares (or such other securities) issued upon such exercise to Holder.

5.2 Legends. The Shares issued upon exercise of this Warrant, unless otherwise registered under the Act, shall bear a legend in substantially the following form:

> THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE COMMON STOCK ISSUED BY THE COMPANY TO K2 HEALTHVENTURES EQUITY TRUST LLC DATED OCTOBER 1, 2021, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE COMPANY,

SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee (including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to any affiliate of Holder, provided that any such transferee is an "accredited investor" as defined in Regulation D promulgated under the Act. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144.

5.4 Transfer Procedure. Subject to the provisions of Section 5.3, upon providing the Company with written notice, Holder may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant to any transferee, provided, however, in connection with any such transfer, Holder will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any subsequent transferee shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant.

5.5 Notices. All notices and other communications hereunder from the Company to Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by facsimile or electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

K2 HEALTHVENTURES EQUITY TRUST LLC
c/o K2 HealthVentures LLC
885 Boylston Street, 10th Floor
Boston, MA 02116
Attn: Finance

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

Trisha Millican
Attn: Chief Financial Officer
3985 Sorrento Valley Blvd., Suite C
San Diego, CA 92121

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Counterparts; Facsimile/Electronic Signatures. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Any signature page delivered electronically or by facsimile shall be binding to the same extent as an original signature page with regards to any agreement subject to the terms hereof or any amendment thereto.

5.8 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of New York, without giving effect to its principles regarding conflicts of law.

5.9 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

5.10 Business Days. "**Business Day**" means any day that is not a Saturday, Sunday or a day on which commercial banks in the State of New York are required or permitted to be closed.

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IN WITNESS WHEREOF, the parties have caused this Warrant to Purchase Common Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

COMPANY:

METACRINE, INC.

By:
Name:
Title:

HOLDER:

K2 HEALTHVENTURES EQUITY TRUST LLC

By:
Name:
Title:

APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right to purchase _____ shares of METACRINE, INC. (the "**Company**") in accordance with the attached Warrant to Purchase Common Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

[ ] check in the amount of $_____ payable to order of the Company enclosed herewith

[ ] Wire transfer of immediately available funds to the Company's account

[ ] Cashless Exercise pursuant to Section 1.2 of the Warrant

[ ] Other [Describe] _____

2. Please issue a certificate or certificates or evidence of book representing the Shares in the name specified below:

Holder's Name

(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Stock as of the date hereof.

HOLDER:

By:

Name:

Title:

Date:

CERTAIN INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) THE TYPE OF INFORMATION THAT THE COMPANY TREATS AS PRIVATE OR CONFIDENTIAL.

EXHIBIT A

CONFORMED LOAN AND SECURITY AGREEMENT

This LOAN AND SECURITY AGREEMENT (as amended, restated, supplemented or otherwise modified from time to time, this "**Agreement**") dated as of August 27, 2019 (the "**Closing Date**") is entered into among **METACRINE, INC.**, a Delaware corporation ("**Borrower Representative**"), and each other Person party hereto as a borrower from time to time (collectively, "**Borrowers**", and each, a "**Borrower**"), **K2 HEALTHVENTURES LLC** and any other lender from time to time party hereto (collectively, "**Lenders**", and each, a "**Lender**"), **K2 HEALTHVENTURES LLC**, as administrative agent for Lenders (in such capacity, together with its successors, "**Administrative Agent**"), and **ANKURA TRUST COMPANY, LLC**, as collateral agent for Lenders (in such capacity, together with its successors, "**Collateral Trustee**").

AGREEMENT

Borrower Representative, each Borrower from time to time party hereto, Administrative Agent, Collateral Trustee and Lenders hereby agree as follows:

1. ACCOUNTING AND OTHER TERMS

Accounting terms not defined in this Agreement shall be construed in accordance with GAAP, and calculations and determinations shall be made following GAAP, consistently applied. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth on Exhibit A. All other terms contained in this Agreement, unless otherwise indicated, shall have the meaning provided by the Code to the extent such terms are defined therein. As used in the Loan Documents, the word "shall" is mandatory, the word "may" is permissive, the word "or" is not exclusive, the words "includes" and "including" are not limiting, the singular includes the plural, and numbers denoting amounts that are set off in brackets are negative. Unless otherwise specified, all references in this Agreement or any Annex or Schedule hereto to a "Section," "subsection," "Exhibit," "Annex," or "Schedule" shall refer to the corresponding Section, subsection, Exhibit, Annex, or Schedule in or to this Agreement. For purposes of the Loan Documents, whenever a representation or warranty is made to a Person's knowledge or awareness, knowledge or awareness means the actual knowledge, after reasonable investigation, of any Responsible Officer of such Person.

2. LOAN AND TERMS OF PAYMENT

2.1 Promise to Pay. Each Borrower hereby unconditionally promises to pay each Lender, ratably, the outstanding principal amount of all Loans, accrued and unpaid interest, fees and charges thereon and to pay all Obligations as and when due in accordance with this Agreement.

2.2 Availability and Repayment of the Loans.

(a) Availability.

(i) Subject to the terms and conditions of this Agreement, each Lender agrees, severally and not jointly, to make to Borrowers an advance on the Second Amendment Effective Date in principal amount equal to its Refinancing First Tranche Term Loan Commitment (the "**Refinancing First Tranche Term Loans**"). Lenders' commitments to make the Refinancing First Tranche Term Loans shall terminate upon the funding of the Refinancing First Tranche Term Loans on the Second Amendment Effective Date.

(ii) Subject to achievement of the Refinancing Second Tranche-A Milestone and the terms and conditions of this Agreement, each Lender agrees, severally and not jointly, to make to Borrowers an advance (at Borrowers' option) during the Refinancing Second Tranche-A Availability Period in principal amount equal to its Refinancing Second Tranche-A Term Loan Commitment (the "**Refinancing Second Tranche-A Term Loans**"). Lenders' commitments to make the Refinancing Second Tranche-A Term Loans shall terminate upon the earlier of (i) the end of the Refinancing Second Tranche-A Availability Period, and (ii) the date the Refinancing Second Tranche-A Term Loans have been funded.

(iii) Subject to achievement of the Refinancing Second Tranche-B Milestone and the terms and conditions of this Agreement, each Lender agrees, severally and not jointly, to make to Borrowers an advance (at Borrowers' option) during the Refinancing Second Tranche-B Availability Period in principal amount equal to its Refinancing Second Tranche-B Term Loan Commitment (the "**Refinancing Second Tranche-B Term Loans**" and together with the Refinancing Second Tranche-A Term loans, the "**Refinancing Second Tranche Term Loans**"). Lenders' commitments to make the Refinancing Second Tranche-B Term Loans shall terminate upon the earlier of (i) the end of the Refinancing Second Tranche-B Availability Period, and (ii) the date the Refinancing Second Tranche-B Term Loans have been funded.

(iv) Subject to achievement of the Refinancing Third Tranche Milestone and the terms and conditions of this Agreement, each Lender agrees, severally and not jointly, to make to Borrowers an advance (at Borrowers' option) during the Refinancing Third Tranche Availability Period in principal amount equal to its Refinancing Third Tranche Term Loan Commitment (the "**Refinancing Third Tranche Term Loans**"). Lenders' commitment to make the Refinancing Third Tranche Term Loans shall terminate upon the earlier of (i) the end of the Refinancing Third Tranche Availability Period, and (ii) the date the Refinancing Third Tranche Term Loans have been funded.

(v) Subject to (w) Borrower Representative proposing to acquire additional pipeline assets (the "**Acquisition Opportunity**") with the proceeds of a Loan requested to be made pursuant to this Section 2.2(v), (x) each Lender's satisfactory review of Borrower Representative's clinical, financial and operating plan as at the time of the applicable Loan Request, including all information requested by the Administrative Agent for its review of the proposed Acquisition Opportunity, (y) each Lender's approval of the requested Loan (in its sole discretion), and (z) the terms and conditions of this Agreement, each Lender agrees, severally and not jointly, to make to Borrowers an advance during the Refinancing Fourth Tranche Availability Period in principal amount not to exceed its Refinancing Fourth Tranche Term Loan Commitment (the "**Refinancing Fourth Tranche Term Loans**" and together with the Refinancing First Tranche Term Loans, the Refinancing Second Tranche Term Loans, and the Refinancing Third Tranche Term Loans, collectively, the "**Refinancing Term Loans**", and each, a "**Refinancing Term Loan**"). No Refinancing Fourth Tranche Term Loans shall be made following the earlier of (i) the end of the Refinancing Fourth Tranche Availability Period, and (ii) the date that Fourth Refinancing Tranche Term Loans have been funded.

Borrowers shall use the proceeds of the Refinancing Term Loans to refinance in full the Refinanced Loan Balance and for working capital; provided, however, the proceeds of any Refinancing Fourth Tranche Term Loans shall be used solely for the acquisition of the Acquisition Opportunity. Once repaid, the Refinancing Term Loans may not be reborrowed.

(b) Repayment. Commencing on the Amortization Date, and continuing thereafter on the each Payment Date through the Term Loan Maturity Date, Borrowers shall make consecutive equal monthly payments of principal and interest, which would fully amortize the principal amount of the Term Loans and accrued interest thereon by the Term Loan Maturity Date; provided, that if the Applicable Rate is adjusted or the Amortization Date or the Term Loan Maturity Date are extended, in each case, in accordance with its terms, the amortization schedule and the required monthly installment shall be recalculated based on the adjusted Applicable Rate and/or the remaining number of Payment Dates through the Term Loan Maturity Date, as the same may be adjusted. Any and all unpaid Obligations, including principal and accrued and unpaid interest in respect of the Term Loans, the fees and payments due pursuant to the Fee Letter, and other fees and other sums, if any, shall be due and payable in full on the Term Loan Maturity Date. The Term Loans may only be prepaid in accordance with Sections 2.2(c) or (d).

(c) Mandatory Prepayment Upon an Acceleration. If the Loans are accelerated following the occurrence and during the continuance of an Event of Default, Borrowers shall immediately pay to Lenders, an amount equal to the sum of:

(i) all outstanding principal plus accrued and unpaid interest thereon, plus

(ii) any fees or payments then due pursuant to the Fee Letter, plus

(iii) all other sums, if any, that shall have become due and payable, including interest at the Default Rate with respect to any past due amounts.

(d) Permitted Prepayment of Loans. Borrowers shall have the option to prepay all, but not less than all, of the Loans, provided Borrowers provide written notice to Administrative Agent of its election to prepay the Loans at least 30 days prior to such prepayment, and pay, on the date of such prepayment, to Lenders, ratably, an amount equal to the sum of:

(i) all outstanding principal plus accrued and unpaid interest thereon, plus

(ii) any fees or payments then due pursuant to the Fee Letter, plus

(iii) all other sums, if any, that shall have become due and payable, including interest at the Default Rate with respect to any past due amounts.

(e) Conversion at Lenders' Election.

(i) Conversion Election. Lenders may jointly elect at any time and from time to time after the Second Amendment Effective Date prior to the payment in full of the Loans to convert any portion of the principal amount of the Loans then outstanding (the "**Conversion Amount**") into shares of Common Stock ("**Conversion Shares**") at the Conversion Price pursuant to a Conversion Election Notice, to be delivered at the direction of Lenders by the Administrative Agent to Borrower Representative; provided that the aggregate principal amount converted into Common Stock in accordance with this Section 2.2(e) shall not exceed $3,000,000. A Conversion Election Notice, once delivered, shall be irrevocable unless otherwise agreed in writing by Borrower Representative. On the third trading day after a Conversion Election Notice has been duly delivered in accordance with the foregoing, Borrower Representative shall deliver to each Designated Holder a number of Conversion Shares equal to (x) the Conversion Amount indicated in the applicable Conversion Election Notice divided by (y) Conversion Price.

(ii) Reservation of Shares. Borrower Representative shall reserve from its duly authorized capital stock not less than the number of shares of Common Stock that may be issuable pursuant to this Section 2.2(e). Upon issuance of Conversion Shares pursuant to this Section 2.2(e), such shares shall be validly issued, fully paid and non-assessable and free from all preemptive or similar rights, taxes, liens and charges with respect to the issue thereof.

(iii) Rule 144. With a view to making available to Designated Holders the benefits of Rule 144 (or its successor rule) and any other rule or regulation of the Securities and Exchange Commission (the "**SEC**") that may at any time permit Designated Holders to sell shares of Common Stock issued pursuant to a Conversion Election Notice to the public without registration, Borrower Representative covenants and agrees to use its commercially reasonable efforts to: (i) make and keep public information available, as those terms are understood and defined in Rule 144, until six (6) months after such date as all of Conversion Shares issued may be sold without restriction by Designated Holders pursuant to Rule 144 or any other rule of similar effect; (ii) file with the SEC in a timely manner (or obtain extensions in respect thereof and file within the applicable grace period) all reports and other documents required of Borrower Representative under the Exchange Act; and (iii) furnish to Designated Holders, upon request, as long as Designated Holders own any shares of Common Stock issued pursuant to a Conversion Election Notice, such information as may be reasonably requested in order to avail Designated Holders of any rule or regulation of the SEC that permits the selling of any Conversion Shares issued without registration.

(iv) [Reserved].

(v) Authorization. For so long as Designated Holders hold any shares of Common Stock issued pursuant to this Section 2.2(e), Borrower Representative shall use its commercially reasonable efforts to maintain the Common Stock's authorization for listing on the NASDAQ Global Select Market, the NASDAQ Global Market or the NASDAQ Capital Market (or on another national securities exchange).

(vi) Limitations on Conversion.

(1) Beneficial Ownership. Notwithstanding anything herein to the contrary, Borrower Representative shall not issue a number of Conversion Shares pursuant to this Section 2.2(e) to the extent that, upon such issuance, the number of shares of Common Stock then beneficially owned by each Designated Holder and its Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with such Designated Holders for purposes of Section 13(d) of the Exchange Act would exceed 9.985% of the total number of shares of Common Stock then issued and outstanding (the "**9.985% Cap**"); provided that the 9.985% Cap shall only apply to the extent that the Common Stock is deemed to constitute an "equity security" pursuant to Rule 13d-1(i) promulgated under the Exchange Act, provided further that Lenders shall have the right, upon 61 days' prior written notice to Borrower Representative, to waive the 9.985% Cap.

(2) Principal Market Regulation. Borrower Representative shall not issue a number of Conversion Shares pursuant to this Section 2.2(e), if the issuance of such shares together with any previously issued Conversion Shares, would result in (A) the issuance of more than 19.99% of the Common Stock outstanding as of the date of this Agreement or (B) Designated Holders, together with their Affiliates and any other persons or entities whose beneficial ownership of Common Stock would be aggregated with such Designated Holder's for purposes of Section 13(d) of the Exchange Act, beneficially owning in excess of 19.99% of the then outstanding Common Stock.

(3) Beneficial Ownership Determination. For purposes of this Section 2.2(e), "group" has the meaning set forth in Section 13(d) of the Exchange Act and applicable regulations of the SEC, and the percentage held by each Designated Holder shall be determined in a manner consistent with the provisions of Section 13(d) of the Exchange Act. Upon the written request of Administrative Agent, Borrower Representative shall, within two (2) trading days, confirm to the Administrative Agent the number of Shares then outstanding. As used herein, beneficial ownership shall be determined in accordance with Section 13(d) of the Exchange Act.

(vii) Certain Adjustments. If Borrower Representative declares or pays a dividend or distribution on the outstanding shares of its Common Stock payable in Common Stock or other securities or property (other than cash), then upon exercise of any conversion option in accordance with this Section 2.2(e), for each Conversion Share acquired, Designated Holder shall receive, without additional cost to Designated Holder, the total number and kind of securities and property which Designated Holder would have received had Designated Holder owned the Conversion Shares of record as of the date the dividend or distribution occurred. Upon any event whereby all of the outstanding shares of the Common Stock are reclassified, converted, exchanged, combined, substituted, or replaced for, into, with or by securities of a different class and/or series, then from and after the consummation of such event, the Conversion Shares issuable will be the number, class and series of securities that Designated Holder would have received had the Conversion Shares been outstanding on and as of the consummation of such event. The provisions of this Section 2.2(e)(vii) shall similarly apply to successive reclassifications, exchanges, combinations substitutions, replacements or other similar events.

(viii) Legends.

(1) Restrictive Legend. Until such time as the Conversion Shares constitute Unrestricted Securities, the Conversion Shares, may bear a restrictive legend in substantially the following form:

> THE SHARES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR THE SECURITIES LAWS OF ANY STATE AND, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

(2) Removal of Restrictive Legends. The certificates or book entries evidencing the Conversion Shares shall not contain any securities legend restricting the transfer thereof (including the securities legend set forth above in subsection (1) above at any time that the Conversion Shares constitute Unrestricted Securities).

(ix) No Fractional Shares. Upon conversion of the Conversion Amount into Conversion Shares, any fraction of a share will be rounded down to the next whole share of the Conversion Shares, and in lieu of such fractional shares to which the Designated Holder would otherwise be entitled, the Borrower Representative shall, at its option, either pay the Designated Holder cash equal to such fraction multiplied by the Conversion Price, or return such amount to principal under the Loan.

2.3 Payment of Interest.

(a) Interest Rate. Subject to Section 2.3(b), the outstanding principal amount of the Loans shall accrue interest from and after its Funding Date, at the Applicable Rate, and Borrowers shall pay such interest monthly in arrears on each Payment Date commencing on September 1, 2019.

(b) Default Rate. Immediately upon the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is 5.0% above the rate that is otherwise applicable thereto (the "**Default Rate**"). Fees and expenses which are required to be paid by Borrowers pursuant to the Loan Documents (including, without limitation, Lender Expenses) but are not paid when due shall bear interest until paid at a rate equal to the highest rate applicable to the Obligations. Payment or acceptance of the increased interest rate provided in this Section 2.3(b) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies pursuant to the Loan Documents. Each Borrower agrees that interest at the Default Rate is a reasonable calculation of Lenders' lost profits in view of the difficulties and impracticality of determining actual damages resulting from an Event of Default.

(c) Payment; Interest Computation. Interest is payable monthly in arrears on the Payment Date of the following month and shall be computed on the basis of a 360-day year for the actual number of days elapsed. In computing interest, (i) all payments received after 3:00 p.m. Eastern Time on any day shall be deemed received at the

opening of business on the next Business Day, and (ii) the date of the making of any Loan shall be included and the date of payment shall be excluded. Changes to the Applicable Rate based on changes to the Prime Rate, shall be effective as of the date, and to the extent, of such change.

(d) Maximum Interest. Notwithstanding any provision in this Agreement or any other Loan Document, it is the parties' intent not to contract for, charge or receive interest at a rate that is greater than the maximum rate permissible by law that a court of competent jurisdiction shall deem applicable hereto (the "**Maximum Rate**"). If a court of competent jurisdiction shall finally determine that a Borrower has actually paid to or for the benefit of Lenders an amount of interest in excess of the amount that would have been payable if all of the Obligations had at all times borne interest at the Maximum Rate, then such excess interest actually paid by Borrowers shall be applied as follows: first, to the payment of principal outstanding in respect of the Loans; second, after all principal is repaid, to the payment of accrued interest, third, to the payment of Lender Expenses and any other Obligations; and fourth, after all Obligations are repaid, the excess (if any) shall be refunded to Borrowers or paid to whomsoever may be legally entitled thereto; provided, that amounts payable to Lenders shall be paid ratably.

2.4 Fees and Charges. Borrowers shall pay to Lenders, ratably:

(a) Fees. The fees as and when due in accordance with the Fee Letter; and

(b) Expenses. All Lender Expenses (including reasonable and documented out-of-pocket attorneys' fees and expenses for documentation and negotiation of this Agreement and the other Loan Documents) incurred through and after the Closing Date or the Second Amendment Effective Date, as applicable, when due (or, if no stated due date, within five Business Days after demand by Administrative Agent).

(c) Fees Fully Earned. Unless otherwise expressly provided in this Agreement or the Fee Letter, the fees and charges specified in clause (a) above are fully-earned as of the Second Amendment Effective Date, and in no event shall any Borrower be entitled to any credit, rebate, refund, reduction, proration or repayment of any fees or charges earned by each Lender pursuant to this Agreement notwithstanding any termination of this Agreement or the suspension or termination of a Lender's obligation to make loans and advances hereunder and notwithstanding the required payment date for such fees or charges. Administrative Agent, on behalf of Lenders, shall be entitled to debit and deduct amounts owing by Borrowers under the clauses of this Section 2.4 pursuant to the terms of Section 2.5(c).

2.5 Payments; Application of Payments; Automatic Payment Authorization; Taxes.

(a) Payments. All payments to be made by Borrowers under any Loan Document, including payments of principal and interest and all fees, charges, expenses, indemnities and reimbursements, shall be made in immediately available funds in Dollars, without setoff, recoupment or counterclaim, before 3:00 p.m. Eastern Time on the date when due. Payments of principal and/or interest received after 3:00 p.m. Eastern Time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment shall be due the next Business Day, and additional fees or interest, as applicable, shall continue to accrue until paid.

(b) Application of Payments. No Borrower shall have a right to specify the order or the loan accounts to which a Lender shall allocate or apply any payments made by a Borrower to or for the benefit of such Lender or otherwise received by such Lender under this Agreement when any such allocation or application is not expressly specified elsewhere in this Agreement.

(c) Automatic Payment Authorization. Administrative Agent, on behalf of Lenders, may initiate debit entries to any Deposit Accounts as authorized on the Automatic Payment Authorization for principal and interest payments or any other Obligations when due. These debits shall not constitute a set-off. If the ACH payment arrangement is terminated for any reason, Borrowers shall make all payments due hereunder at the applicable address specified in Section 10, or as otherwise notified by Administrative Agent in writing.

(d) Taxes.

(i) Any and all payments by or on account of any obligation of any Loan Party under any Loan Document shall be made free and clear of and without deduction or withholding for any Taxes, except as required by applicable law. If any applicable law (in each case, as determined in the good faith discretion of the applicable Withholding Agent) requires any withholding or deduction of any Tax from any such payment by a Withholding Agent, then the applicable Withholding Agent shall be entitled to make such deduction or withholding and shall timely pay the full amount deducted or withheld to the relevant Governmental Authority in accordance with applicable law and, if such tax is an Indemnified Tax, then the sum payable by the applicable Loan Party shall be

increased as necessary so that, after the making of such required withholding or deduction (including such withholdings and deductions applicable to additional sums payable under this Section 2.5(d)), the applicable Recipient receives an amount equal to the sum it would have received had no such withholding or deduction been made.

(ii) The Loan Parties shall timely pay to the relevant Governmental Authority in accordance with applicable law, or at the option of the Administrative Agent timely reimburse it for the payment of, any Other Taxes.

(iii) The Loan Parties shall jointly and severally indemnify each Recipient, within 10 days after demand therefor, for the full amount of any Indemnified Taxes (including Indemnified Taxes imposed or asserted on or attributable to amounts payable under this Section 2.5(d)) payable or paid by such Recipient or required to be withheld or deducted from a payment to such Recipient and any reasonable expenses arising therefrom or with respect thereto, whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. A certificate as to the amount of such payment or liability delivered to the Borrower Representative by a Lender (with a copy to the Administrative Agent), or by the Administrative Agent on its own behalf or on behalf of a Lender, shall be conclusive absent manifest error.

(iv) Each Lender shall severally indemnify the Administrative Agent, within 10 days after demand therefor, for (1) any Indemnified Taxes attributable to such Lender (but only to the extent that any Loan Party has not already indemnified the Administrative Agent for such Indemnified Taxes and without limiting the obligation of the Loan Parties to do so), (2) any Taxes attributable to such Lender's failure to comply with the provisions of Section 12.2(d) relating to the maintenance of a Participant Register and (3) any Excluded Taxes attributable to such Lender, in each case, that are payable or paid by the Administrative Agent in connection with any Loan Document, and any reasonable expenses arising therefrom or with respect thereto, whether or not such Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. A certificate as to the amount of such payment or liability delivered to any Lender by the Administrative Agent shall be conclusive absent manifest error. Each Lender hereby authorizes the Administrative Agent to set off and apply any and all amounts at any time owing to such Lender under any Loan Document or otherwise payable by the Administrative Agent to the Lender from any other source against any amount due to the Administrative Agent under this Section 2.5(d)(iv).

(v) As soon as practicable after any payment of Taxes by any Loan Party to a Governmental Authority pursuant to this Section 2.5(d), such Loan Party shall deliver to the Administrative Agent the original or a certified copy of a receipt issued by such Governmental Authority evidencing such payment, a copy of the return reporting such payment or other evidence of such payment reasonably satisfactory to the Administrative Agent.

(vi) *Status of Lenders*.

(1) Any Lender that is entitled to an exemption from or reduction of withholding Tax with respect to payments made under any Loan Document shall deliver to the Borrower Representative and the Administrative Agent, at the time or times reasonably requested by the Borrower Representative or the Administrative Agent, such properly completed and executed documentation reasonably requested by the Borrower Representative or the Administrative Agent as will permit such payments to be made without withholding or at a reduced rate of withholding. In addition, any Lender, if reasonably requested by the Borrower Representative or the Administrative Agent, shall deliver such other documentation prescribed by applicable law or reasonably requested by the Borrower Representative or the Administrative Agent as will enable the Borrower Representative or the Administrative Agent to determine whether or not such Lender is subject to backup withholding or information reporting requirements. Notwithstanding anything to the contrary in the preceding two sentences, the completion, execution and submission of such documentation (other than such documentation set forth in Sections 2.5(d)(vi)(2)(a), (b) and (d) below) shall not be required if in the Lender's reasonable judgment such completion, execution or submission would subject such Lender to any material unreimbursed cost or expense or would materially prejudice the legal or commercial position of such Lender.

(2) Without limiting the generality of the foregoing, in the event that the Borrower is a U.S. Person,

a) any Lender (or, if the Lender is a disregarded entity for U.S. federal income tax purposes, the Person treated as the owner of the assets of such Lender for U.S. federal income tax purposes) that is a U.S. Person shall deliver to the Borrower Representative and the Administrative Agent on or prior to the date on which such Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of the Borrower Representative or the Administrative Agent), executed copies of IRS Form W-9 certifying that such Lender is exempt from U.S. federal backup withholding tax;

b) any Lender that is not a U.S. Person shall, to the extent it is legally entitled to do so, deliver to the Borrower Representative and the Administrative Agent (in such number of copies as shall be requested by the recipient) on or prior to the date on which such Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of the Borrower Representative or the Administrative Agent), executed copies of IRS Form W-8BEN, IRS Form W-8BEN-E, IRS Form W-8ECI or IRS Form W-8IMY (along with any attachments required under applicable law);

c) any Lender that is not a U.S. Person shall, to the extent it is legally entitled to do so, deliver to the Borrower Representative and the Administrative Agent (in such number of copies as shall be requested by the recipient) on or prior to the date on which such Lender becomes a Lender under this Agreement (and from time to time thereafter upon the reasonable request of the Borrower Representative or the Administrative Agent), executed copies of any other form prescribed by applicable law as a basis for claiming exemption from or a reduction in U.S. federal withholding Tax, duly completed, together with such supplementary documentation as may be prescribed by applicable law, in each case, to permit the Borrower or the Administrative Agent to determine the withholding or deduction required to be made; and

d) if a payment made to a Recipient under any Loan Document would be subject to U.S. federal withholding Tax imposed by FATCA if such Recipient were to fail to comply with the applicable reporting requirements of FATCA (including those contained in Section 1471(b) or 1472(b) of the IRC, as applicable), such Recipient shall deliver to the Borrower Representative and the Administrative Agent at the time or times prescribed by law and at such time or times reasonably requested by the Borrower Representative or the Administrative Agent such documentation prescribed by applicable law (including as prescribed by Section 1471(b)(3)(C)(i) of the IRC) and such additional documentation reasonably requested by the Borrower Representative or the Administrative Agent as may be necessary for the Borrowers and the Administrative Agent to comply with their obligations under FATCA and to determine that such Recipient has complied with such Recipient's obligations under FATCA or to determine the amount, if any, to deduct and withhold from such payment. Solely for purposes of this Section 2.5(d)(vi)(2)(c), "FATCA" shall include any amendments made to FATCA after the date of this Agreement.

(3) On or prior to the date the Administrative Agent becomes a party to this Agreement, the Administrative Agent shall, in the event that the Administrative Agent is a U.S. Person, deliver an executed copy of IRS Form W-9 to the Borrower Representative, and in the event the Administrative Agent is not a U.S. Person, deliver to Borrower (i) with respect to any amounts payable on behalf of the Borrowers under any Loan Document to the Administrative Agent for its own account, an executed copy of an applicable IRS Form W-8, and (ii) with respect to any amounts payable under any Loan Document to the Administrative Agent for the account of others, an executed copy of IRS Form W-8IMY (along with any attachments required under applicable law).

Each Recipient agrees that if any form or certification it previously delivered expires or becomes obsolete or inaccurate in any respect, it shall update such form or certification or promptly notify the Borrower and the Administrative Agent in writing of its legal inability to do so.

(vii) *Treatment of Certain Refunds*. If any party determines, in its sole discretion exercised in good faith, that it has received a refund of any Taxes as to which it has been indemnified pursuant to this Section 2.5(d) (including by the payment of additional amounts pursuant to this Section 2.5(d)), it shall pay to the indemnifying party an amount equal to such refund (but only to the extent of indemnity payments made under this Section 2.5(d) with respect to the Taxes giving rise to such refund), net of all out-of-pocket expenses (including Taxes) of such indemnified party and without interest (other than any interest paid by the relevant Governmental Authority with respect to such refund). Such indemnifying party, upon the request of such indemnified party, shall repay to such indemnified party the amount paid over pursuant to this Section 2.5(d)(vii) (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) in the event that such indemnified party is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this Section 2.5(d)(vii), in no event will the indemnified party be required to pay any amount to an indemnifying party pursuant to this Section 2.5(d)(vii) the payment of which would place the indemnified party in a less favorable net after-Tax position than the indemnified party would have been in if the Tax subject to indemnification and giving rise to such refund had not been deducted, withheld or otherwise imposed and the indemnification payments or additional amounts with respect to such Tax had never been paid. This Section 2.5(d)(vii) shall not be construed to require any indemnified party to make available its Tax returns (or any other information relating to its Taxes that it deems confidential) to the indemnifying party or any other Person.

(viii) *Survival*. Each party's obligations under this Section 2.5(d) shall survive the resignation or replacement of Administrative Agent or Collateral Trustee or any assignment of rights by, or the replacement of, a Lender, the termination of the Commitments and the repayment, satisfaction or discharge of all obligations under any Loan Document.

2.6 **Promissory Notes**. Borrowers agree that: (a) upon written notice by or on behalf of any Lender to Borrowers that a promissory note or other evidence of indebtedness is requested by such Lender to evidence the Loans and other Obligations owing or payable to, or to be made by, such Lender, Borrowers shall promptly (and in any event within three Business Days of any such request) execute and deliver to such Lender an appropriate promissory note, in substantially the form attached hereto as Exhibit G; and (b) upon any Lender's written request, and in any event within three Business Days of any such request, the Borrowers shall execute and deliver to such Lender new notes and/or divide the notes in exchange for then existing notes in such smaller amounts or denominations as such Lender shall specify in its sole and absolute discretion; provided, that the aggregate principal amount of such new notes shall not exceed the aggregate principal amount of the applicable Loans made by such Lender; provided, further, that such promissory notes that are to be replaced shall then be deemed no longer outstanding hereunder and replaced by such new notes and returned to the Borrowers within a reasonable period of time after such Lender's receipt of the replacement notes. Regardless whether or not any such promissory notes are issued, this Agreement shall evidence the Loans and other Obligations owing or payable by Borrowers to each Lender.

2.7 **Increased Costs**. If any Change in Law shall subject any Recipient to any Taxes (other than (a) Indemnified Taxes, (b) Taxes described in clauses (b) through (d) of the definition of Excluded Taxes and (c) Connection Income Taxes) on its loans, loan principal, letters of credit, commitments, or other obligations, or its deposits, reserves, other liabilities or capital attributable thereto, and the result of the foregoing shall be to increase the cost to such Recipient of making, converting to, continuing or maintaining any Loan or of maintaining its obligation to make any such Loan, then upon the request of such Recipient, the Borrowers will pay to such Recipient such additional amount or amounts as will compensate such Recipient for such additional costs incurred. A certificate of a Recipient setting forth the amount or amounts necessary to compensate such Recipient shall be conclusive absent manifest error. The Borrowers shall pay such Recipient the amount shown as due on any such certificate within 10 days after receipt thereof.

3. CONDITIONS OF LOANS

3.1 **Conditions Precedent to Initial Loan**. Each Lender's obligation to make the initial Loan is subject to the condition precedent that Lenders shall have received, in form and substance satisfactory to Administrative Agent, such documents, and completion of such other matters, as Administrative Agent may reasonably deem necessary or appropriate, including, without limitation:

(a) duly executed signatures to this Agreement;

(b) duly executed signatures to the Warrant;

(c) duly executed signatures to the Fee Letter;

(d) duly executed signatures to the Account Control Agreement(s) required under Section 6.6(b);

(e) [reserved];

(f) the Perfection Certificate of Borrower Representative, together with the duly executed signature thereto;

(g) evidence satisfactory to Administrative Agent, that the insurance policies and endorsements required by Section 6.5 are in full force and effect;

(h) the original stock certificates representing any Shares, if any, together with a stock power or other appropriate instrument of transfer, duly executed by the holder of record of such Shares and in blank;

(i) a legal opinion of counsel to Borrower Representative; and

(j) payment of the fees then due in accordance with the Fee Letter.

3.2 **Conditions Precedent to all Loans**. Each Lender's obligations to make each Loan is subject to the following conditions precedent:

(a) except for the Term Loan made on the Closing Date, any other Term Loans made prior to the Second Amendment Effective Date or the Refinancing Term Loans made on the Second Amendment Effective Date, timely receipt of an executed Loan Request by Administrative Agent;

(b) the representations and warranties in this Agreement and the other Loan Documents shall be true, accurate and complete in all material respects on the date of the Loan Request and on the Funding Date of each Loan; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date;

(c) no Default or Event of Default shall have occurred and be continuing or result from the Loan; and

(d) there has not been a Material Adverse Effect since the Second Amendment Effective Date, as determined by Administrative Agent in Administrative Agent's good faith discretion.

3.3 Covenant to Deliver.

(a) Borrowers agree to deliver each item required to be delivered under this Agreement as a condition precedent to any Loan. Borrowers expressly agree that a Loan made prior to the receipt of any such item shall not constitute a waiver by Administrative Agent of a Borrower's obligation to deliver such item, and the making of any Loan in the absence of a required item shall be in Administrative Agent's sole discretion.

(b) Borrower agrees to deliver the items set forth on Schedule 2 hereto within the timeframe set forth therein (or by such other date as Administrative Agent may approve in writing), in each case, in form and substance reasonably acceptable to Administrative Agent.

3.4 Procedures for Borrowing. To obtain a Term Loan (other than the Term Loans made on the Closing Date, any other Loans made prior to the Second Amendment Effective Date and the Refinancing Term Loans made on the Second Amendment Effective Date), Borrowers shall deliver a completed Loan Request to Administrative Agent (which may be delivered by email) no later than 3:00 p.m. Eastern Time, 10 Business Days prior to the date such Loan is requested to be made. On the Funding Date, each applicable Lender shall fund the applicable Loan in the manner requested by the Loan Request; provided, that each of the conditions precedent to such Loan are satisfied,

4. CREATION OF SECURITY INTEREST

4.1 Grant of Security Interest. Each Borrower hereby grants to Collateral Trustee, for the ratable benefit of Lenders, to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to Collateral Trustee, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof. If this Agreement is terminated, Collateral Trustee's Lien in the Collateral shall continue until the Obligations (other than contingent indemnification obligations as to which no claim has been asserted or is known to exist) are repaid in full in cash.

4.2 Priority of Security Interest. Each Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral (subject only to Permitted Liens that, as applicable, are permitted pursuant to the terms of this Agreement to have superior priority to Collateral Trustee's Lien under this Agreement). If a Borrower shall acquire a commercial tort claim with a potential recovery in excess of $250,000, Borrowers shall promptly notify Administrative Agent in writing and deliver such other information and documents as Administrative Agent may require to take any further action necessary or advisable to perfect Collateral Trustee's Lien in such commercial tort claim. If a Borrower shall acquire a certificate with respect to Shares or any instrument, such Borrower shall promptly notify Administrative Agent and deliver the same together with a stock power or instrument of transfer and any necessary endorsement, all in form satisfactory to Collateral Trustee.

4.3 Authorization to File Financing Statements. Each Borrower hereby authorizes Collateral Trustee or its designee (or the Administrative Agent, on behalf of the Collateral Trustee) to file at any time financing statements, continuation statements and amendments thereto with all appropriate jurisdictions to perfect or protect Collateral Trustee's interest or rights hereunder.

4.4 Pledge of Collateral. Each Borrower hereby pledges, assigns and grants to Collateral Trustee a security interest in (i) with respect to any Subsidiary that is not an Excluded Foreign Subsidiary, all the Equity Interests in which such Borrower has any interest, including the Shares, and (ii) with respect to each Subsidiary that is a First-Tier Foreign Subsidiary, 65% of the voting Equity Interests of such First-Tier Foreign Subsidiary and 100% of the non-voting Equity Interests of such First-Tier Foreign Subsidiary, in each case, together with all proceeds and substitutions thereof, all cash, stock and other moneys and property paid thereon, all rights to subscribe for securities declared or granted in connection therewith, and all other cash and noncash proceeds of the foregoing, as security for the

performance of the Obligations. For the avoidance of doubt, no pledge shall be required with respect to (i) any Equity Interests in any Excluded Foreign Subsidiary other than a First-Tier Foreign Subsidiary and (ii) any asset directly or indirectly owned by any Excluded Foreign Subsidiary. On the Closing Date or as required pursuant to Section 6.10, the certificate or certificates for such Equity Interests, to the extent certificated, will be delivered to Collateral Trustee, accompanied by a stock power or other appropriate instrument of assignment duly executed in blank. To the extent required by the terms and conditions governing the Equity Interests in which a Borrower has an interest, such Borrower shall cause the books of each Person whose Equity Interests are part of the Collateral and any transfer agent to reflect the pledge of the Equity Interests. Upon the occurrence and during the continuance of an Event of Default hereunder, Collateral Trustee may effect the transfer of any securities included in the Collateral (including but not limited to the Equity Interests) into the name of Collateral Trustee and cause new certificates representing such securities to be issued in the name of Collateral Trustee or its transferee. Each Borrower will execute and deliver such documents, and take or cause to be taken such actions, as Administrative Agent may reasonably request to perfect or continue the perfection of Collateral Trustee's security interest in the Equity Interests. Unless an Event of Default shall have occurred and be continuing, each Borrower shall be entitled to exercise any voting rights with respect to the Equity Interests in which it has an interest and to give consents, waivers and ratifications in respect thereof; provided, that no such notice shall be required if a Borrower has commenced an Insolvency Proceeding and, in any event, no vote shall be cast or consent, waiver or ratification given or action taken which would be inconsistent with any of the terms of this Agreement or which would constitute or create any violation of any of such terms. All such rights to vote and give consents, waivers and ratifications shall terminate upon the occurrence and during the continuance of an Event of Default.

5. REPRESENTATIONS AND WARRANTIES

Each Borrower represents and warrants as follows:

5.1 Due Organization, Authorization; Power and Authority.

(a) Each Loan Party and each of its Subsidiaries are duly existing and in good standing as a Registered Organization in their respective jurisdictions of formation and are qualified and licensed to do business and are in good standing in any other jurisdiction in which the conduct of their respective business or ownership of property require that they be qualified except where the failure to do so would not reasonably be expected to have a Material Adverse Effect. In connection with this Agreement, Borrower Representative has delivered to Administrative Agent a completed certificate signed by Borrower Representative entitled "**Perfection Certificate**" dated as of the Second Amendment Effective Date. Except to the extent Borrower Representative has provided notice of a legal name change in accordance with Section 7.2, (i) each Loan Party's exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (ii) each Loan Party is an organization of the type and is organized in the jurisdiction set forth in the Perfection Certificate; (iii) the Perfection Certificate accurately sets forth each Loan Party's organizational identification number or accurately states that such Loan Party has none; (iv) the Perfection Certificate accurately sets forth each Loan Party's place of business, or, if more than one, its chief executive office as well as such Loan Party's mailing address (if different than its chief executive office); (v) except as set forth in the Perfection Certificate, each Loan Party (and each of its predecessors) has not, in the past five years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (vi) all other information set forth on the Perfection Certificate pertaining to each Loan Party and each of its Subsidiaries is true, correct and complete in all material respects (it being understood and agreed that each Loan Party may from time to time update certain information in the Perfection Certificate after the Closing Date to the extent permitted by one or more specific provisions in this Agreement).

(b) The execution, delivery and performance by each Loan Party of the Loan Documents to which it is a party have been duly authorized, and do not (i) conflict with such Loan Party's Operating Documents or other organizational documents, (ii) contravene, conflict with, constitute a default under or violate any material Requirement of Law, (iii) contravene, conflict or violate any material applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which such Loan Party or any of its Subsidiaries or any of their property or assets may be bound or affected, (iv) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals which have already been obtained and are in full force and effect), or (v) conflict with, contravene, constitute a default or breach under, or result in or permit the termination or acceleration of, any material agreement by which such Loan Party is bound. No Loan Party is in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a Material Adverse Effect.

5.2 Collateral.

(a) Each Loan Party has good title to, rights in, and the power to transfer each item of the Collateral upon which it purports to grant a Lien hereunder, free and clear of any and all Liens except Permitted Liens.

(b) Except for the Excluded Accounts and Collateral Accounts described in the Perfection Certificate or in a notice timely delivered pursuant to Section 6.6, no Loan Party has any Excluded Accounts or Collateral Accounts at or with any bank, broker or other financial institution, and each Loan Party has taken such actions as are necessary to give Collateral Trustee a perfected security interest in the Collateral Accounts as required pursuant to the terms of Section 6.6(b). The Accounts are bona fide, existing obligations of the Account Debtors.

(c) The Collateral is located only at the locations identified in the Perfection Certificate and other Permitted Locations. The Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate or as disclosed in writing pursuant to Section 6.11.

(d) Each Loan Party is the sole owner of the Intellectual Property which it owns or purports to own except for (i) licenses constituting "Permitted Transfers", (ii) open-source software, (iii) over-the-counter software that is commercially available to the public, (iv) material Intellectual Property licensed to such Loan Party and noted on the Perfection Certificate or as disclosed pursuant to Section 6.7(b), and (v) immaterial Intellectual Property licensed to such Loan Party. Each Patent (other than patent applications) which it owns or purports to own and which is material to such Loan Party's business is valid and enforceable, and no part of the Intellectual Property which a Loan Party owns or purports to own and which is material to the Loan Parties' business has been judged invalid or unenforceable, in whole or in part. To the best of each Borrower's knowledge, no claim has been made that any part of the Intellectual Property violates the rights of any third party except to the extent such claim would not reasonably be expected to have a Material Adverse Effect. Except as noted on the Perfection Certificate or as disclosed pursuant to Section 6.7(b), no Loan Party is a party to, nor is it bound by, any Restricted License. No Subsidiary which is not a Loan Party owns any material Intellectual Property. It will not be necessary to use any inventions of any of such Loan Party's employees or consultants (or Persons it currently intends to hire) made prior to their employment by such Loan Party. Each current and prior employee, consultant or other Affiliate thereof has entered into an invention assignment agreement or similar agreement with such Loan Party with respect to all intellectual property rights he or she owns that are related to the Loan Parties' business.

5.3 Accounts; Material Agreements. The Accounts are bona fide existing obligations. The property or services giving rise to such Accounts have been delivered or rendered. No Borrower has received any notice of actual or imminent insolvency of an Account Debtor. The material licenses and agreements to which any Loan Party or any of its Subsidiaries is a party is in good standing and in full force and effect and no Loan Party is in material breach with respect thereto. No material customer or supplier has terminated, significantly reduced or communicated its intent to do so to any Loan Party or any of its Subsidiaries.

5.4 Litigation and Proceedings. Except as set forth in the Perfection Certificate or as disclosed in writing pursuant to Section 6.2, there are no actions, suits, litigations or proceedings, at law or in equity, pending, or, to the knowledge of any Responsible Officer, threatened in writing, by or against any Loan Party or any of its Subsidiaries, officers or directors involving more than, individually or in the aggregate for all related proceedings, $250,000 or in which any adverse decision has had or would reasonably be expected to have any Material Adverse Effect.

5.5 Financial Statements; Financial Condition. All consolidated financial statements for the Loan Parties and each of their Subsidiaries delivered to Administrative Agent fairly present in all material respects the consolidated financial condition and results of operations of the Loan Parties and each of their Subsidiaries as of the respective dates and for the respective periods then ended, and there are no material liabilities (including any contingent liabilities) which are not reflected in such financial statements. There has not been any material deterioration in the consolidated financial condition of the Loan Parties and each of its Subsidiaries or the Collateral since the date of the most recent financial statements submitted to Administrative Agent.

5.6 Solvency. The fair salable value of the assets (including goodwill minus disposition costs) of the Loan Parties and each of their Subsidiaries, on a consolidated basis, exceeds the fair value of liabilities of the Loan Parties' and each of their Subsidiaries, on a consolidated basis; no Loan Party is left with unreasonably small capital after the transactions in this Agreement; and each Loan Party is able to pay its debts (including trade debts) as they mature.

5.7 Consents; Approvals. Each Loan Party and each of its Subsidiaries have obtained all third party consents, approvals, waivers, made all declarations or filings with, given all notices to, and obtained all consents, licenses, permits or other approvals from all Governmental Authorities that are necessary (i) to enter into the Loan Documents and consummate the transactions contemplated thereby, and (ii) to continue their respective businesses as currently conducted, except (with respect to this clause (ii)) where failure to do so would not reasonably be expected to result in a Material Adverse Effect.

5.8 Subsidiaries; Investments. No Loan Party has any Subsidiaries, except as noted on the Perfection Certificate or as disclosed to Administrative Agent pursuant to Section 6.10 below. No Loan Party owns any stock, partnership, or other ownership interest or other Equity Interests except for Permitted Investments.

5.9 Tax Returns and Payments. Each Loan Party and each of its Subsidiaries has (i) filed all tax returns and reports required to be filed (taking into account appropriate extensions therefor), and (ii) paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by such Loan Party or such Subsidiary, as applicable, in each case, except to the extent that (a) such taxes are being contested in good faith by appropriate proceedings diligently conducted, so long as such reserve or other appropriate provision, if any, as shall be required in conformity with GAAP shall have been made therefor, or (b) the failure to do so could not reasonably be expected to result, individually or in the aggregate, in a Material Adverse Effect.

5.10 Shares. Such Borrower has full power and authority to create a first lien on the Shares and no disability or contractual obligation exists that would prohibit such Borrower from pledging the Shares pursuant to this Agreement. There are no subscriptions, warrants, rights of first refusal or other restrictions on transfer relative to, or options exercisable with respect to the Shares. The Shares have been and will be duly authorized and validly issued, and are fully paid and non-assessable. The Shares are not the subject of any present or threatened suit, action, arbitration, administrative or other proceeding, and such Borrower knows of no reasonable grounds for the institution of any such proceedings.

5.11 Compliance with Laws.

(a) No Loan Party or Subsidiary of a Loan Party is an "investment company" or an "affiliated person" of, or "promoter" or "principal underwriter" for, an "investment company", as such terms are defined in the Investment Company Act of 1940 as amended.

(b) No Loan Party or Subsidiary of a Loan Party is engaged, nor will it engage, principally or as one of its important activities, in the business of extending credit for the purpose of "purchasing" or "carrying" any "margin security" as such terms are defined in Regulation U of the Federal Reserve Board as now and from time to time hereafter in effect (such securities being referred to herein as "**Margin Stock**"). None of the proceeds of the Loans or other extensions of credit under this Agreement have been (or will be) used, directly or indirectly, for the purpose of purchasing or carrying any Margin Stock, for the purpose of reducing or retiring any Indebtedness which was originally incurred to purchase or carry any Margin Stock or for any other purpose which might cause any of the Loans or other extensions of credit under this Agreement to be considered a "purpose credit" within the meaning of Regulation T, U or X of the Federal Reserve Board.

(c) No Loan Party has taken or permitted to be taken any action which might cause any Loan Document to violate any regulation of the Federal Reserve Board. Neither the making of the Loans hereunder nor Borrowers' use of the proceeds thereof will violate the Trading with the Enemy Act, as amended, or any of the foreign assets control regulations of the United States Treasury Department (31 CFR, Subtitle B, Chapter V, as amended) or any enabling legislation or executive order relating thereto. No Loan Party, nor any of its Subsidiaries, nor any Affiliate of any Loan Party or of any Subsidiary, nor any present holder of Equity Interests of any of the foregoing (i) is a Person described or designated in the Specially Designated Nationals and Blocked Persons List of the Office of Foreign Assets Control of the United States Department of Treasury ("**OFAC**") or in Section 1 of the Anti-Terrorism Order or similar sanctions laws of any other Governmental Authority including of any other applicable jurisdiction, (ii) is a citizen or resident of any country that is subject to embargo or trade sanctions enforced by OFAC, (iii) is, or will become, a Person whose property or interest in property is blocked or subject to blocking pursuant to Section 1 of the Anti-Terrorism Order, or (iv) engages in any dealings or transactions, or is otherwise associated, with any such Person.

(d) Each Loan Party and its Subsidiaries are in compliance, in all material respects, with the USA Patriot Act. No part of the proceeds from the Loans made hereunder has been (or will be) used, directly or indirectly, for any payments to any governmental official or employee, political party, official of a political party, candidate for political office, or anyone else acting in an official capacity, in order to obtain, retain or direct business or obtain any improper advantage, in violation of the United States Foreign Corrupt Practices Act of 1977, as amended.

(e) No Reportable Event or Prohibited Transaction, as defined in ERISA has occurred or is reasonably expected to occur, and no Loan Party has failed to meet the minimum funding requirements of ERISA. No Loan Party has violated any applicable environmental laws in any material respect, maintains any properties or assets which have been designated in any manner pursuant to any environmental protection statute as a hazardous materials disposal site, or has received any notice, summons, citation or directive from the Environmental Protection Agency or any other similar Governmental Authority.

5.12 Products. A complete and accurate list of the Products, is set forth on the Perfection Certificate, as updated from time to time pursuant to the Compliance Certificate. The Loan Parties and each of its Subsidiaries hold all material required Governmental Approvals, a list of which is set forth on the Perfection Certificate, and all such Governmental Approvals are in full force and effect. There are no proceedings in progress, pending or, to such Loan Party's knowledge, threatened, that may result in revocation, cancellation, suspension, rescission or any adverse modification of any such material required Governmental Approval nor, to the best of the knowledge, information and

belief of such Loan Party, after due inquiry, are there any facts upon which proceedings could reasonably be based. Without limitation of the foregoing:

(a) With respect to any Product being tested or manufactured, each Loan Party and each of its Subsidiary has received, and such Product is the subject of, all Governmental Approvals needed in connection with the testing or manufacture of such Product as such testing is currently being conducted by or on behalf of a Loan Party or any of its Subsidiaries, and neither any Loan Party nor any of its Subsidiaries has received any notice from any applicable Governmental Authority, that such Governmental Authority is conducting an investigation or review of (i) any Loan Party's or any of its Subsidiary's manufacturing facilities and processes for such Product which have disclosed any material deficiencies or violations of any Requirement of Law or the Governmental Approvals related to the manufacture of such Product, or (ii) any such Governmental Approval or that any such Governmental Approval has been revoked or withdrawn, nor has any such Governmental Authority issued any order or recommendation stating that the development, testing and/or manufacturing of such Product should cease.

(b) With respect to any Product marketed or sold by a Loan Party or any of its Subsidiaries, such Loan Party or such Subsidiary, as applicable, has received, and such Product is the subject of, all Governmental Approvals needed in connection with the marketing and sales of such Product as currently being marketed or sold, and no Loan Party nor any of its Subsidiary has received any notice from any applicable Governmental Authority, that such Governmental Authority is conducting an investigation or review of any such Governmental Approval or approval or that any such Governmental Approval has been revoked or withdrawn, nor has any such Governmental Authority issued any order or recommendation stating that such marketing or sales of such Product cease or that such Product be withdrawn from the marketplace;

(c) There have been no adverse clinical test results in connection with a Product which have or would reasonably be expected to have a Material Adverse Effect; and

(d) There have been no Product recalls or voluntary Product withdrawals from any market.

5.13 Full Disclosure. No written representation, warranty or other statement of a Loan Party or any of its Subsidiaries in any certificate or written statement by or on behalf of a Loan Party or any of its Subsidiaries in connection with this Agreement, as of the date such representation, warranty, or other statement was made, taken together with all such written certificates and written statements given, contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements not misleading in light of the circumstances under which they were made (it being recognized that the projections and forecasts provided by any Loan Party in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results).

6. AFFIRMATIVE COVENANTS

Each Borrower shall, and shall cause each Loan Party to, do all of the following:

6.1 Government Compliance. Maintain its and all its Subsidiaries' legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to have a Material Adverse Effect; comply, and cause each Subsidiary to comply, with all laws, ordinances and regulations to which it is subject except where a failure to do so would not reasonably be expected to have a Material Adverse Effect; obtain all of the Governmental Approvals required in connection with such Loan Party's business and for the performance by each Loan Party of its obligations under the Loan Documents to which it is a party and the grant of a security interest in accordance therewith, and comply with all terms and conditions with respect to such Governmental Approvals.

6.2 Financial Statements, Reports, Certificates. Provide Administrative Agent with the following:

(a) Monthly Financial Statements. Within 30 days after the last day of each month, a company prepared consolidated balance sheet, income statement and statement of cash flows covering the Loan Parties and each of their Subsidiaries' operations for such month, in form reasonably acceptable to Administrative Agent, certified by a Responsible Officer as having been prepared in accordance with GAAP, consistently applied, except for the absence of footnotes, and subject to normal year-end adjustments.

(b) Monthly Compliance Certificate. Within 30 days after the last day of each month and together with the monthly financial statements, a duly completed Compliance Certificate signed by a Responsible Officer, certifying that as of the end of such month, the Loan Parties were in full compliance with all of the terms and conditions of this Agreement, and such other information as Administrative Agent may reasonably request.

(c) Annual Operating Budget and Financial Projections. Upon the earlier of (x) 60 days after the end of each fiscal year of Borrower Representative and (y) five Business Days after approval by the Borrower Representative's Board of Directors (and, in either case, promptly and within five Business Days of any material modification thereto), an annual operating budget, on a consolidated basis (including income statements, balance sheets and cash flow statements, by month) for the upcoming fiscal year of Borrower Representative, together with any related business forecasts used in the preparation thereof.

(d) Annual Audited Financial Statements. As soon as available, but no later than 150 days after the last day of Borrower Representative's fiscal year, audited consolidated financial statements prepared in accordance with GAAP, consistently applied, together with an unqualified opinion on the financial statements from an independent certified public accounting firm reasonably acceptable to Administrative Agent, together with any management letter with respect thereto.

(e) Other Statements. Within five Business Days of delivery, copies of all statements, reports and notices generally made available to all Borrower Representative's Equity Interest holders or to all holders of Borrower Representative's preferred stock or to any holders of Subordinated Debt.

(f) SEC Filings. Within five days of filing, copies of all periodic and other reports, proxy statements and other materials filed by Borrower Representative with the Securities and Exchange Commission; provided, that such filings shall be deemed to have been delivered on the date on which Borrower Representative posts such documents on Borrower Representative's website.

(g) Legal Action Notice. A prompt report of any legal actions pending or threatened in writing against any Loan Party or any of its Subsidiaries that could result in damages or costs to any Loan Party or any of its Subsidiaries, individually or in the aggregate for all related proceedings, of $250,000 or more, or of any Loan Party or any of its Subsidiaries taking or threatening legal action against any third person with respect to a material claim, and with respect to any pending action or threatened action, promptly report any material development with respect thereto.

(h) [Reserved.]

(i) Board Materials. (x) At the same time and in the same manner as it gives to the members of Borrower Representative's Board, copies of all materials that Borrower Representative provides to its Board in connection with meetings of Borrower Representative's Board, including any reports with respect to Borrowers' operations or performance; provided, however, that Borrower Representative shall not be required to provide Administrative Agent with draft materials that are not provided to all members of Borrower Representative's Board, and (y) promptly after such meeting, minutes of such meetings; provided, however, the foregoing shall exclude, for the avoidance of doubt, any communications between Borrower Representative and its Board that are not provided in connection with any regularly-scheduled or special meeting of the Borrower Representative's Board and shall be subject to such further exclusions and redactions as necessary in order to (A) preserve the confidentiality of highly sensitive proprietary information, or (B) prevent impairment of the attorney client privilege with respect to pending or threatened litigation.

(j) Intellectual Property Report. Together with the Compliance Certificate delivered at the end of each calendar quarter, a report in form reasonably acceptable to Administrative Agent, listing any applications or registrations that any Loan Party or any of its Subsidiaries has made or filed in respect of any Patents, Copyrights or Trademarks and the status of any outstanding applications or registrations, as well as any material change in any Loan Party or any of its Subsidiaries' Intellectual Property.

(k) Aging Reports; Other Reports and Information. Together with the monthly financial reports, reports as to the following, in form acceptable to Administrative Agent: accounts receivable and accounts payable aging, and, upon at least 15 days' prior written notice to such Loan Party, any other information related to the financial or business condition of any Loan Party as reasonably requested by Administrative Agent.

(l) Bank Account Statements. Together with the monthly financial statements delivered in accordance with subsection (a) above or within three Business Days of receipt by any Loan Party of such documentation from the applicable depository bank, a copy of the most recent account statement, with transaction detail, for each Deposit Account or Securities Account of a Loan Party or any of its Subsidiaries, or within three Business Days, upon Administrative Agent's request, evidence satisfactory to Administrative Agent of the balance maintained in any such Deposit Account or Securities Account.

(m) [Reserved.]

(n) Product Related. Within five Business Days of receipt, copies of all material correspondence, reports, documents and other filings with any Governmental Authority that could reasonably be expected to have a material adverse effect on any Governmental Approvals required for the manufacturing, marketing, testing or sale of Products or which could have a Material Adverse Effect.

6.3 Inventory; Returns. Keep all Inventory in all material respects in good and marketable condition, free from material defects, except for Inventory and Equipment sold in the ordinary course of business pursuant to this Agreement. Returns and allowances between a Loan Party and its Account Debtors shall follow such Loan Party's customary practices as they exist at the Closing Date or as is standard in the industry. Borrower Representative shall promptly notify Administrative Agent of all returns, recoveries, disputes and claims that involve more than $250,000.

6.4 Taxes; Pensions. File, and cause each of its Subsidiaries to file, all required tax returns and reports and pay, and require each of its Subsidiaries to pay, all foreign, federal, state and local Taxes owed by such Loan Party and each of its Subsidiaries, except (a) to the extent that the failure to do so could not reasonably be expected to have a Material Adverse Effect, or (b) for deferred payment of any taxes contested pursuant to the terms of Section 5.9, and shall deliver to Administrative Agent, promptly upon demand (but in any event within 20 Business Days), appropriate certificates attesting to such payments, and pay all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms.

6.5 Insurance.

(a) Keep, and cause each Subsidiary to keep, its business and the Collateral insured for risks and in amounts standard for companies in the Loan Parties' industry and location. Insurance policies shall be in a form, with financially sound and reputable insurance companies that are not Affiliates of any Loan Party, and in amounts that are reasonably satisfactory to Administrative Agent.

(b) Ensure that proceeds payable under any property policy with respect to Collateral are, at Administrative Agent's option, payable to Collateral Trustee, for the ratable benefit of Lenders, on account of the Obligations. To that end, all property policies shall have a lender's loss payable endorsement showing Collateral Trustee as lender loss payable, all liability policies shall show, or have endorsements showing, Collateral Trustee as an additional insured, in each case, in form satisfactory to Collateral Trustee and as set forth on Exhibit E.

(c) Notwithstanding the foregoing: (i) so long as no Event of Default has occurred and is continuing, (A) the Loan Parties shall have the option of applying the proceeds of any casualty policy up to $500,000, in the aggregate per fiscal year, toward the prompt replacement or repair of destroyed or damaged property, and (B) if any destroyed or damaged property includes any finished drug products, the Loan Parties shall have the option of applying an additional amount of the proceeds of any casualty policy up to $500,000, in the aggregate per fiscal year, toward the prompt replacement or repair of destroyed or damaged finished drug products; provided, that in no event shall the aggregate amount of proceeds of any casualty policy in excess of $1,000,000, in the aggregate per fiscal year, be applied to the replacement or repair of destroyed or damaged property, including any destroyed or damaged finished drug products; provided, further, that any such replaced or repaired property (x) shall be of equal or like value as the replaced or repaired Collateral and (y) shall be deemed Collateral in which Collateral Trustee has been granted a first priority security interest; and (ii) after the occurrence and during the continuance of an Event of Default, all such proceeds shall, at the option of Administrative Agent, be payable to Collateral Trustee, for the ratable benefit of Lenders, on account of the Obligations.

(d) Within five Business Days of Administrative Agent's request, Borrower Representative shall deliver certified copies of insurance policies and evidence of all premium payments. Each provider of any such insurance required under this Section 6.5 shall agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Collateral Trustee, that it will give Collateral Trustee 30 days' prior written notice before any such policy or policies shall be canceled (or 10 days' notice for cancellation for non-payment of premiums).

(e) If any Loan Party fails to obtain insurance as required under this Section 6.5 or to pay any amount or furnish any required proof of payment upon Administrative Agent's request, Collateral Trustee may make all or part of such payment or obtain such insurance policies required in this Section 6.5, and take any action under the policies as Collateral Trustee deems prudent or as Administrative Agent may direct.

6.6 Deposit and Securities Accounts.

(a) Maintain Collateral Accounts only at the banks and other financial institutions identified in the Perfection Certificate or as disclosed pursuant to a notice timely delivered pursuant to subsection (b) below. Borrowers shall further maintain an ACH payment structure in favor of Administrative Agent, satisfactory to Administrative Agent.

(b) Provide Administrative Agent 15 Business Days' prior written notice before establishing any Collateral Account at or with any bank, broker or other financial institution, and upon opening such account, provide Administrative Agent with a written notice identifying the name, address of each bank or other institution, the name in which the account is held, a description of the purpose of the account, and the complete account number therefor. For each Collateral Account that any Loan Party at any time maintains, Borrowers shall cause the applicable bank, broker or financial institution at or with which any Collateral Account is maintained to execute and deliver an Account Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Collateral Trustee's Lien in such Collateral Account in accordance with the terms hereunder; provided, however, that (i) for the Collateral Accounts identified in the Perfection Certificate as of the Closing Date, Borrower Representative shall deliver duly executed Account Control Agreements (in such final form as is reasonably acceptable to Administrative Agent and Collateral Trustee) for each such Collateral Account within five Business Days following the Closing Date, and (ii) no Account Control Agreement shall be required with respect to any Excluded Account.

(c) In the event that Borrowers have Account in excess of $250,000 in the aggregate with respect to which Medicare or other similar programs of any Governmental Authority is the Account Debtor, Borrowers shall notify Administrative Agent thereof, and shall enter into an amendment to this Agreement and set up such dedicated Collateral Accounts and direct the payment of such Accounts as Administrative Agent may direct to protect Collateral Trustee's interests in such Accounts and the proceeds thereof.

6.7 Intellectual Property.

(a) Protect, defend and maintain the validity and enforceability of its Intellectual Property material to its business; promptly advise Administrative Agent in writing of material infringements or any other event that could reasonably be expected to materially and adversely affect the value of its Intellectual Property material to its business; not suffer any material claim of infringement that would reasonably be expected to have a Material Adverse Effect unless such claim is dismissed within 30 days from initiation thereof or Borrowers have demonstrated to Administrative Agent's satisfaction that such proceedings are without merit and adequate reserves have been taken; and not allow any Intellectual Property material to the Loan Parties' business to be abandoned, forfeited or dedicated to the public without Administrative Agent's written consent.

(b) The following Section 6.7(b) shall only apply if and for so long as the Collateral (as set forth on Exhibit B) includes Intellectual Property; and if and for so long as the Collateral (as set forth on Exhibit B) does not include Intellectual Property, this Section 6.7(b) shall not be applicable for any purpose under this Agreement or the other Loan Documents. If any Loan Party (i) obtains any Patent, registered Trademark, registered Copyright, registered mask work, or any pending application for any of the foregoing, whether as owner or licensee, or (ii) applies for any Patent or the registration of any Trademark, then Borrower Representative shall promptly provide written notice thereof to Administrative Agent and shall execute such intellectual property security agreements and other documents and take such other actions as Administrative Agent may request to protect Collateral Trustee's interest in such property. If a Loan Party decides to register any Copyrights or mask works in the United States Copyright Office, Borrower Representative shall: (x) provide Administrative Agent with at least 15 days' prior written notice of such Loan Party's intent to register such Copyrights or mask works together with a copy of the application it intends to file with the United States Copyright Office (excluding exhibits thereto); (y) execute an intellectual property security agreement and such other documents and take such other actions as Administrative Agent may request to perfect and maintain a first priority perfected security interest in favor of Collateral Trustee in the Copyrights or mask works intended to be registered with the United States Copyright Office; and (z) record such intellectual property security agreement with the United States Copyright Office contemporaneously with filing the Copyright or mask work application(s) with the United States Copyright Office.

(c) Provide written notice to Administrative Agent at least 30 days' prior to any Loan Party entering or becoming bound by any Restricted License (other than off the shelf software and services that are commercially available to the public), and obtain, or cause such Loan Party to obtain, the consent of, or waiver in form satisfactory to Administrative Agent from any person whose consent or waiver is necessary for (i) any Restricted License to be deemed "Collateral" and for Collateral Trustee to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, and (ii) Collateral Trustee to have the ability in the event of a liquidation of any Collateral to dispose of such Restricted License together with other Collateral in accordance with Collateral Trustee's rights and remedies under this Agreement and the other Loan Documents.

6.8 Litigation Cooperation. From the Closing Date and continuing through the termination of this Agreement, make available to Administrative Agent, Collateral Trustee and any Lender, without expense to Administrative Agent, Collateral Trustee or such Lender, as applicable, on reasonable prior notice and at reasonable times and intervals, each Loan Party and its officers, employees and agents and each Loan Party's books and records, subject to any applicable confidentiality obligations of each Loan Party, to the extent that Administrative Agent, Collateral Trustee or such Lender may deem them reasonably necessary to prosecute or defend any third-party suit or

proceeding instituted by or against Administrative Agent, Collateral Trustee or such Lender with respect to any Collateral or relating to such Loan Party.

6.9 Access to Collateral; Books and Records. Allow Administrative Agent, Collateral Trustee, or its respective agents, to inspect the Collateral and audit and copy such Loan Party's books in accordance with Section 6.12. Such inspections or audits shall be conducted (a) upon not less than two Business Days' prior notice to such Loan Party (provided that no such notice shall be required if an Event of Default has occurred and is continuing) and (b) no more often than once every 12 months (unless an Event of Default has occurred and is continuing in which case such inspections and audits shall occur as often as Administrative Agent shall determine is necessary). The foregoing inspections and audits shall be at Borrowers' expense.

6.10 Joinder of Subsidiaries.

(a) No later than 15 days after such time as a Loan Party or any of its Subsidiaries forms any direct or indirect Subsidiary or acquires any direct or indirect Subsidiary after the Closing Date, or at any time upon request of Administrative Agent with respect to any Subsidiary whether existing as of the Closing Date or thereafter created or acquired: (a) promptly, and in any event within five days of creation, acquisition or request, as applicable, provide written notice to Administrative Agent together with certified copies of the Operating Documents for such Subsidiary, and (b) promptly, and in any event within 10 days of formation or creation, or upon Administrative Agent's request, as applicable: (i) take all such action as may be reasonably required by Administrative Agent to cause the applicable Subsidiary (other than an Excluded Foreign Subsidiary) to either: (A) provide a joinder to this Agreement pursuant to which such Subsidiary becomes a Loan Party hereunder, or (B) guarantee the Obligations of Borrowers under the Loan Documents and grant a security interest in and to the collateral of such Subsidiary (substantially as described on Exhibit B), in each case together with such Account Control Agreements and other documents, instruments and agreements reasonably requested by Administrative Agent, all in form and substance satisfactory to Administrative Agent (including being sufficient to grant Collateral Trustee a first priority Lien, subject to Permitted Liens in and to the assets of such Subsidiary), and (ii) (A) with respect to any Subsidiary that is not an Excluded Foreign Subsidiary, to pledge all of the direct or beneficial Equity Interests in such Subsidiary or (B) with respect to any Subsidiary that is a First-Tier Foreign Subsidiary, to pledge 65% of the voting Equity Interests of such First-Tier Foreign Subsidiary and 100% of the non-voting Equity Interests of such First-Tier Foreign Subsidiary. Any document, agreement, or instrument executed or issued pursuant to this Section 6.10 shall be a Loan Document. For the avoidance of doubt, no pledge shall be required with respect to (i) any Equity Interests in any Excluded Foreign Subsidiary other than a First-Tier Foreign Subsidiary and (ii) any asset directly or indirectly owned by any Excluded Foreign Subsidiary.

(b) Borrowers shall not permit any Excluded Foreign Subsidiaries, First-Tier Foreign Subsidiaries or any other Subsidiaries which are not Loan Parties, in the aggregate, to maintain (i) cash and other assets with an aggregate value for all such Subsidiaries in excess of 5.0% of Borrower Representative's consolidated assets, (ii) revenue in excess of 5.0% of Borrower Representative's consolidated revenues for any 12-month period then ended, (iii) any Intellectual Property which is material to the business of Borrowers as a whole, or (iv) any contracts which are material to the business of Borrowers as a whole, without causing one or more of such Subsidiaries to enter into a joinder or guaranty in form satisfactory to Administrative Agent with respect to the Obligations as Administrative Agent may request within 15 days (or such other period as Administrative Agent may agree in writing), such that compliance with clauses (i) through (iv) shall be restored.

6.11 Property Locations.

(a) Provide to Administrative Agent at least 10 days' prior written notice before adding any new offices or business or Collateral locations, including warehouses (unless such new offices or business or Collateral locations qualify as Excluded Locations).

(b) With respect to any property or assets of a Loan Party located with a third party, including a bailee, datacenter or warehouse (other than Excluded Locations), Borrowers shall use commercially reasonable efforts to cause such third party to execute and deliver a Collateral Access Agreement for such location, including an acknowledgment from each of the third parties that it is holding or will hold such property, subject to Collateral Trustee's security interest.

(c) With respect to any property or assets of a Loan Party located on leased premises (other than Excluded Locations), Borrowers shall use commercially reasonable efforts to cause such third party to execute and deliver a Collateral Access Agreement for such location.

6.12 Management Rights. Upon reasonable advance notice, any representative of Administrative Agent shall have the right to meet with management and officers of Borrowers to discuss such books of account and records. In addition, Administrative Agent shall be entitled to consult with and advise the management and officers of Borrowers

concerning significant business issues affecting Borrowers. Such consultations shall occur no more often than once per fiscal quarter and shall not unreasonably interfere with any Loan Party's business operations. For the avoidance of doubt, any advice, recommendations, or participation by Administrative Agent with respect to any business issues in connection with the Administrative Agent's exercise of its rights under this Section 6.12 shall not be deemed to give Administrative Agent, nor be deemed an exercise by Administrative Agent of, control over Borrowers' management or policies, and Borrowers shall have no obligation to act upon or follow any such advice or recommendation.

6.13 Right to Invest.

(a) In connection with any Qualified Financings consummated after the Second Amendment Effective Date, Lenders or their respective assignees or nominees shall have the right, in their respective discretion to participate in any Qualified Financing; provided that with respect to any public offering of Borrower Representative, Borrower Representative agrees to use commercially reasonable efforts to provide the Lenders or their respective assignees or nominees with the opportunity to invest in each such Qualified Financing if it is lawful to do so (or if the Qualified Financing is an underwritten public offering pursuant to a registration statement under the Securities Act, to use commercially reasonable efforts to cause the underwriters for such offering to offer the Lenders or their respective assignees or nominees an allocation of securities in such offering), on the same terms, conditions and pricing afforded to other investors participating in such Qualified Financing; provided that the maximum aggregate investment amount by Lenders and their respective assignees or nominees for all participation in Qualified Financings pursuant to this Section 6.13 shall be $2,500,000. Borrower Representative shall provide written notice to Administrative Agent not later than the date upon which potential investors are notified of a Qualified Financing, and if a Lender desires to exercise its right to participate in such Qualified Financing, Lender shall cooperate to consummate its investment in such closing promptly upon receipt of documentation with respect thereto. Borrower Representative shall not take any action to avoid or seek to avoid the observance or performance of any of the obligations pursuant to this Section 6.13, but will at all times in good faith assist in the carrying out the same and take all such action as may be necessary or appropriate, but only to the extent permitted by law, to protect the rights of Lenders and their respective assignees or nominees hereunder against impairment.

(b) "**Qualified Financing**" means any offering of common stock, convertible preferred stock or other equity securities (or instruments exercisable for, or convertible into, shares of common stock, convertible preferred stock or other equity securities) of Borrower Representative consummated after the Second Amendment Effective Date for the principal purpose of raising capital, but shall exclude any "at-the-market" offerings or facilities.

(c) The right to invest described in this Section 6.13 shall no longer be exercisable and shall become null and void upon the later to occur of (i) termination of this Agreement (as the same may be amended or amended and restated from time to time) pursuant to its terms or (ii) the Term Loan Maturity Date. For the avoidance of doubt, Lenders' exercise of any right to invest pursuant to this Agreement prior to the Second Amendment Effective Date shall not count as Lenders' exercise of its right to invest under this Section 6.13 with respect to any Qualified Financing following the Second Amendment Effective Date.

6.14 Further Assurances. Execute any further instruments and take further action as Administrative Agent or Collateral Trustee reasonably request to perfect or continue Collateral Trustee's Lien in the Collateral or to effect the purposes of this Agreement.

7. NEGATIVE COVENANTS

No Borrower shall, or shall cause or permit any of its Subsidiaries to, do any of the following:

7.1 Dispositions. Convey, sell, lease, transfer, assign, or otherwise dispose of (collectively, "**Transfer**") all or any part of its business or property, except for Permitted Transfers.

7.2 Changes in Business, Management, Ownership, or Business Locations. (a) Engage in any business other than the businesses currently engaged in by such Person, as applicable, or reasonably related thereto; (b) cease doing business, or liquidate or dissolve; (c) permit or suffer a Change in Control (except as expressly permitted in Section 7.3); or (d) without at least 10 days' prior written notice to Administrative Agent (i) change its jurisdiction of organization, (ii) change its organizational structure or type, (iii) change its legal name, or (iv) change its organizational number (if any) assigned by its jurisdiction of organization.

7.3 Mergers or Acquisitions. Merge or consolidate with any other Person, or acquire all or substantially all of the capital stock or property of another Person or business line of another Person (including, without limitation, by the formation of any Subsidiary) or enter into any agreement to do any of the same.

7.4 **Indebtedness**. Create, incur, assume, or be liable for any Indebtedness, other than Permitted Indebtedness.

7.5 **Encumbrance**. Create, incur, allow, or suffer any Lien on any of its property (including any Intellectual Property), or assign or convey any right to receive income, including the sale of any Accounts, except for Permitted Liens, or otherwise permit any Collateral not to be subject to the first priority security interest granted herein, except in connection with Permitted Liens permitted to have priority over Collateral Trustee's Lien, as applicable.

7.6 **Maintenance of Collateral Accounts**. Maintain any Collateral Account except pursuant to the terms of Section 6.6(b).

7.7 **Distributions; Investments**. (a) Pay any dividends or make any distribution or payment or redeem, retire or purchase any Equity Interests; provided, that (i) Borrower Representative may convert any of its convertible Equity Interests (including warrants) into other Equity Interests issued by Borrower Representative pursuant to the terms of such convertible securities or otherwise in exchange thereof, (ii) Borrower Representative may convert Subordinated Debt issued by Borrower Representative into Equity Interests issued by Borrower Representative pursuant to the terms of such Subordinated Debt and to the extent permitted under the terms of the applicable subordination or intercreditor agreement; (iii) any Borrower or Subsidiary thereof may pay dividends solely in Equity Interests of such Borrower or Subsidiary; (iv) Borrower Representative may make cash payments in lieu of fractional shares; (v) Borrower Representative may (A) repurchase the Equity Interests issued by Borrower Representative pursuant to stock repurchase agreements approved by Borrower Representative's Board and (B) purchase Equity Interests in connection with the exercise of stock options through a cashless exercise, in each case so long as an Event of Default does not exist at the time of such repurchase or purchase, as applicable, and would not exist after giving effect to such repurchase or purchase, as applicable; provided, that the aggregate amount of all such repurchases and purchases under this clause (v) does not exceed $250,000 per fiscal year; and (vi) Borrower Representative may repurchase the Equity Interests issued by Borrower Representative to former employees, consultants or directors pursuant to stock repurchase agreements approved by Borrower Representative's Board where the sole consideration for the repurchase is the cancellation of indebtedness owed by such former employees, consultants or directors to Borrower Representative regardless of whether and Event of Default exists; provided, that the aggregate amount of all such cancelled indebtedness does not exceed $250,000 in the aggregate; or (b) directly or indirectly make any Investment (including, without limitation, by the formation of any Subsidiary), other than Permitted Investments. Notwithstanding the foregoing, Loan Parties shall be permitted to make the repurchases, payments or distributions expressly permitted above only if, at such time, and immediately after giving effect thereto: (i) no Default or Event of Default, exists or could reasonably be expected to occur, (ii) each Loan Party is solvent, and (iii) such payment or distribution is permitted under and is made in compliance with all applicable laws.

7.8 **Transactions with Affiliates**. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of a Loan Party, except for (a) transactions that are in the Ordinary Course of Business and on fair and reasonable terms that are no less favorable to such Person than would be obtained in an arm's length transaction with a non-affiliated Person; (b) bona fide rounds of Subordinated Debt or equity financing by investors in Borrower Representative for capital raising purposes, (c) reasonable and customary director, officer and employee compensation and other customary benefits including retirement, health, stock option and other benefit plans and indemnification arrangements approved by Borrower Representative's Board, and (d) distributions permitted under Section 7.7.

7.9 **Subordinated Debt**. (a) Make or permit any payment on any Subordinated Debt, except as permitted pursuant to the terms of the subordination, intercreditor, or other similar agreement to which such Subordinated Debt is subject, or (b) amend any provision in any document relating to the Subordinated Debt which would increase the amount thereof, provide for earlier or greater principal, interest, or other payments thereon, or adversely affect the subordination thereof to the Obligations.

7.10 **Compliance**. Become an "investment company" or a company controlled by an "investment company", under the Investment Company Act of 1940, as amended, or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Loan for that purpose; take any action or fail to take any action (or suffer any other Person to do so), to the extent the same would cause the representations set forth in Section 5.11(c) to be untrue; fail to meet the minimum funding requirements of ERISA, permit a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; fail to comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if the violation would reasonably be expected to have a Material Adverse Effect; withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which would reasonably be expected to result in any liability of a Loan Party or any of its Subsidiaries, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

8. EVENTS OF DEFAULT

Any one of the following shall constitute an event of default (an "**Event of Default**") under this Agreement:

8.1 Payment Default. Any Loan Party fails to pay any Obligations after such Obligations are due and payable.

8.2 Covenant Default.

(a) A Borrower fails or neglects to perform any obligation in Sections 3.3(b), 4.2, 6.2, 6.4, 6.5, or 6.6, or violates any covenant in Section 7; or

(b) A Loan Party fails or neglects to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any Loan Documents, and as to any default (other than those specified in this Section 8) under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure the default within 15 Business Days after the occurrence thereof.

8.3 Material Adverse Effect. An event or circumstance has occurred which would reasonably be expected to have a Material Adverse Effect; provided, that, solely for purposes of this Section 8.3, the failure of a clinical trial in the FXR/NASH program prior to March 31, 2022 shall not, in and of itself, constitute a Material Adverse Effect.

8.4 Attachment; Levy; Restraint on Business.

(a) (i) The service of process seeking to attach, by trustee or similar process, any material portion of funds of a Loan Party or of any of its Subsidiaries, or (ii) a notice of Lien or levy is filed against the any material portion of assets of any Loan Party or any of its Subsidiaries by any Governmental Authority, and the same under clauses (i) and (ii) hereof are not, within 10 days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, no Loans shall made during any 10-day cure period; or

(b) (i) Any material portion of the assets of a Loan Party or any of its Subsidiaries is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents a Loan Party or any of its Subsidiaries from conducting all or any material part of its business;

8.5 Insolvency. (a) A Loan Party or any of its Subsidiaries, as a whole, is unable to pay its debts (including trade debts) as they become due or otherwise becomes insolvent, the realizable value of the Loan Parties' assets is less than the aggregate sum of its liabilities, or the Loan Parties; (b) a Loan Party or any of its Subsidiaries begins an Insolvency Proceeding; or (c) an Insolvency Proceeding is begun against a Loan Party or any of its Subsidiaries and is not dismissed or stayed within 45 days (but no Loans shall be made while any of the conditions described in this Section 8.5 exist and/or until any Insolvency Proceeding is dismissed).

8.6 Other Agreements. There is, under any agreement to which a Loan Party or any of its Subsidiaries is a party with a third party or parties, (a) any default resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount individually or in the aggregate in excess of $250,000 (except if such third party is restricted from accelerating the maturity of such Indebtedness, including pursuant to the terms of a subordination or similar agreement entered into with respect to the Obligations); or (b) any breach or default by a Loan Party or a Subsidiary of such Loan Party, the result of which would have a Material Adverse Effect.

8.7 Judgments; Penalties. One or more fines, penalties or final judgments, orders or decrees for the payment of money in an amount, individually or in the aggregate, of at least $250,000 shall be rendered against a Loan Party or any of its Subsidiaries by any Governmental Authority, and the same are not, within 10 days after the entry, assessment or issuance thereof, vacated, or after execution thereof, stayed or bonded pending appeal; provided, that no Loans will be made prior to the vacation, stay, or bonding of such fine, penalty, judgment, order or decree.

8.8 Misrepresentations. Any Loan Party or any Person acting for such Loan Party makes any representation, warranty, or other statement now or later in this Agreement, any Loan Document or in any writing delivered to Administrative Agent, Collateral Trustee or any Lender or to induce Administrative Agent, Collateral Trustee or any Lender to enter this Agreement or any Loan Document, and such representation, warranty, or other statement is incorrect in any material respect when made.

8.9 Subordinated Debt. Any Subordination Agreement governing any Subordinated Debt shall for any reason be revoked or invalidated or otherwise cease to be in full force and effect, any party thereto (other than Administrative Agent, Collateral Trustee or any Lender) shall be in breach thereof or contest in any manner the validity

or enforceability thereof or deny that it has any further obligation thereunder, or the Obligations shall for any reason not have the priority contemplated by this Agreement.

8.10 Governmental Approval. Any Governmental Approval shall have been revoked, rescinded, suspended, modified in an adverse manner or not renewed for a full term, and such revocation, rescission, suspension, modification or non-renewal has, or would have, a Material Adverse Effect.

8.11 Guaranty. Any guaranty of any Obligations terminates or ceases for any reason to be in full force and effect.

9. COLLATERAL TRUSTEE'S RIGHTS AND REMEDIES

9.1 Rights and Remedies. Upon the occurrence and during the continuance of an Event of Default, Collateral Trustee is entitled, at the direction of Administrative Agent, subject to the terms of the Collateral Trust Agreement, without notice or demand, to do any or all of the following:

(a) declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Collateral Trustee);

(b) stop advancing money or extending credit for any Borrower's benefit under this Agreement (and each Lender's Commitment shall be deemed terminated as long as an Event of Default has occurred and is continuing);

(c) verify the amount of, demand payment of and performance under, and collect any Accounts and General Intangibles, settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Administrative Agent may determine is advisable, and notify any Person owing a Borrower money of Collateral Trustee's security interest in such funds;

(d) make any payments and do any acts it considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral;

(e) ratably apply to the Obligations any amount held by Collateral Trustee owing to or for the credit or the account of a Borrower;

(f) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral;

(g) deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Account Control Agreement or similar agreements providing control of any Collateral;

(h) demand and receive possession of any Borrower's Books; and

(i) exercise all rights and remedies available to Collateral Trustee under the Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

Borrowers shall assemble the Collateral if Collateral Trustee requests and make it available as Collateral Trustee designates. Collateral Trustee may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Solely upon the occurrence and during the continuance of an Event of Default, each Borrower shall grant Collateral Trustee a license to enter and occupy any of its premises, without charge, to exercise any of Collateral Trustee's rights or remedies. Solely upon the occurrence and during the continuance of an Event of Default, Collateral Trustee shall be granted a non-exclusive, royalty-free license or other right to use, without charge, a Borrower's labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Collateral Trustee's exercise of its rights under this Section, a Borrower's rights under all licenses and all franchise agreements inure to Collateral Trustee's benefit. If, after the acceleration of the Indebtedness, a Loan Party receives proceeds of Collateral, such Borrower shall (or shall cause the applicable Loan Party) to deliver such proceeds to Collateral Trustee, for the ratable benefit of Lenders, to be applied to the Obligations.

9.2 Power of Attorney. Each Borrower hereby irrevocably appoints Collateral Trustee (and any of Collateral Trustee's partners, managers, officers, agents or employees) as its lawful attorney-in-fact, with full power of substitution, exercisable upon the occurrence and during the continuance of an Event of Default, to: (a) send requests for verification of Accounts or notify Account Debtors of Collateral Trustee's security interest and Liens in the Collateral; (b) endorse such Borrower's name on any checks or other forms of payment or security; (c) sign such Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors schedules and assignments of Accounts, verifications of Accounts, and notices to Account Debtors; (d) settle and adjust disputes and claims about the Accounts directly with Account Debtors, for amounts and on terms Administrative Agent or Collateral Trustee determine reasonable; (e) make, settle, and adjust all claims under such Borrower's insurance policies; (f) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; (g) transfer the Collateral into the name of Collateral Trustee or a third party as the Code permits; and (h) dispose of the Collateral. Each Borrower further hereby appoints Collateral Trustee (and any of Collateral Trustee's partners, managers, officers, agents or employees) as its lawful attorney-in-fact, with full power of

substitution, regardless of whether or not an Event of Default has occurred or is continuing to: (i) sign such Borrower's name on any documents and other Security Instruments necessary to perfect or continue the perfection of, or maintain the priority of, Collateral Trustee's security interest in the Collateral, (ii) take all such actions which such Borrower is required, but fails to do under the covenants and provisions of the Loan Documents; (iii) take any and all such actions as Collateral Trustee may reasonably determine to be necessary or advisable for the purpose of maintaining, preserving or protecting the Collateral or any of the rights, remedies, powers or privileges of Collateral Trustee under this Agreement or the other Loan Documents. Collateral Trustee's foregoing appointment as each Borrower's attorney in fact, and all of Collateral Trustee's rights and powers, coupled with an interest, are irrevocable until all Obligations (other than contingent indemnification obligations as to which no claim has been asserted or is known to exist) have been fully repaid, in cash, and otherwise fully performed and all commitments to make Loans hereunder have been terminated.

9.3 Protective Payments. If a Borrower fails to obtain the insurance called for by Section 6.5 or fails to pay any premium thereon or fails to pay any other amount which such Borrower is obligated to pay under this Agreement or any other Loan Document or which may be required to preserve the Collateral, Collateral Trustee may obtain such insurance or make such payment, and all amounts so paid by Collateral Trustee are Lender Expenses and immediately due and payable, bearing interest at the then highest rate applicable to the Obligations, and secured by the Collateral. Collateral Trustee will make reasonable efforts to provide Borrower Representative with notice of Collateral Trustee obtaining such insurance at the time it is obtained or within a reasonable time thereafter. No payments by Collateral Trustee are deemed an agreement to make similar payments in the future or Collateral Trustee's waiver of any Event of Default.

9.4 Application of Payments and Proceeds Upon Default. If an Event of Default has occurred and is continuing, Collateral Trustee shall have the right to apply in any order any funds in its possession, whether payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations, for the ratable benefit of Lenders. Collateral Trustee shall pay any surplus to Borrowers by credit to the Deposit Account designated by Borrowers or as directed by a court of competent jurisdiction. Borrowers shall remain liable to Collateral Trustee and Lenders for any deficiency. If Collateral Trustee, directly or indirectly, enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Collateral Trustee may, at the direction of Administrative Agent, either reduce the Obligations by the principal amount of the purchase price or defer the reduction of the Obligations until the actual receipt by Collateral Trustee of cash or immediately available funds therefor.

9.5 Collateral Trustee's Liability for Collateral. So long as Collateral Trustee complies with reasonable secured lender practices regarding the safekeeping of the Collateral in the possession or under the control of Collateral Trustee, Collateral Trustee shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrowers bear all risk of loss, damage or destruction of the Collateral.

9.6 No Waiver; Remedies Cumulative. Any failure by Administrative Agent, Collateral Trustee or any Lender, at any time or times, to require strict performance by each Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Administrative Agent, Collateral Trustee or any Lender thereafter to demand strict performance and compliance herewith or therewith. Collateral Trustee's rights and remedies under this Agreement and the other Loan Documents are cumulative. Collateral Trustee has all rights and remedies provided under the Code, by law, or in equity. Collateral Trustee or any Lender's exercise of one right or remedy is not an election and shall not preclude Collateral Trustee or any Lender from exercising any other remedy under this Agreement or other remedy available at law or in equity, and any waiver of any Event of Default is not a continuing waiver. Any delay in exercising any remedy is not a waiver, election, or acquiescence.

9.7 Demand Waiver. Each Borrower waives presentment, demand, notice of default or dishonor, notice of payment and nonpayment, release, compromise, settlement, extension, or renewal of accounts, documents, instruments or chattel paper.

9.8 **Shares**. Each Borrower recognizes that Collateral Trustee may be unable to effect a public sale of any or all the Shares, by reason of certain prohibitions contained in federal securities laws and applicable state securities laws or otherwise, and may be compelled to resort to one or more private sales thereof to a restricted group of purchasers which will be obliged to agree, among other things, to acquire such securities for their own account for investment and not with a view to the distribution or resale thereof. Each Borrower acknowledges and agrees that any such private sale may result in prices and other terms less favorable than if such sale were a public sale and, notwithstanding such circumstances, agrees that any such private sale shall be deemed to have been made in a commercially reasonable manner. Collateral Trustee shall be under no obligation to delay a sale of any of the Shares for the period of time necessary to permit the issuer thereof to register such securities for public sale under federal securities laws or under applicable state securities laws, even if such issuer would agree to do so.

10. NOTICES

All notices, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon confirmation of receipt, when sent by electronic mail transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, or email address indicated below. Administrative Agent, Collateral Trustee, Lenders and Borrowers may change their respective mailing or electronic mail addresses by giving the other party written notice thereof in accordance with the terms of this Section 10.

If to a Borrower:	METACRINE, INC. 3985 Sorrento Valley Blvd., Suite C San Diego, CA 92121 Attention: Trisha Millican
With a copy, not constituting notice, to:	Cooley LLP 4401 Eastgate Mall San Diego, CA 92121 Attention: Karen Deschaine Anderson
If to Collateral Trustee:	ANKURA TRUST COMPANY, LLC 140 Sherman Street, Fourth Floor Fairfield, CT 06824 Attention: Lisa Price
If to Administrative Agent or Lenders:	K2 HEALTHVENTURES LLC 885 Boylston Street, 10th Floor Boston, MA 02116 For Loan Requests, monthly reporting, Compliance Certificates and other regular reporting deliverables: Attention: Finance For all other Notices: Attention: Legal Notices

11. CHOICE OF LAW, VENUE AND JURY TRIAL WAIVER

Except as otherwise expressly provided in any of the Loan Documents, this Agreement and the other Loan Documents shall be governed by, and construed in accordance with, the laws of the State of New York without regard to principles of conflicts of law. Each Borrower hereby submits to the exclusive jurisdiction of the State and Federal courts in New York County, City of New York, New York; provided, however, that nothing in this Agreement shall be deemed to operate to preclude Collateral Trustee from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Administrative Agent, Collateral Trustee or any Lender. Each Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and each Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Each Borrower hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to such Borrower at the address set forth in, or subsequently provided by such Borrower in accordance with, Section

10 and that service so made shall be deemed completed upon the earlier to occur of Borrowers' actual receipt thereof or three Business Days after deposit in the U.S. mails, proper postage prepaid. Each Borrower hereby expressly waives any claim to assert that the laws of any other jurisdiction govern this Agreement.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, EACH OF THE PARTIES HERETO EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR THE PARTIES TO ENTER INTO THIS AGREEMENT. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT OR ANYWHERE ELSE, EACH BORROWER AGREES THAT IT SHALL NOT SEEK FROM ADMINISTRATIVE AGENT, COLLATERAL TRUSTEE OR ANY LENDER UNDER ANY THEORY OF LIABILITY (INCLUDING ANY THEORY IN TORTS), ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

This Section 11 shall survive the termination of this Agreement.

12. GENERAL PROVISIONS

12.1 Termination Prior to Term Loan Maturity Date; Survival; Release of Collateral. All covenants, representations and warranties made in this Agreement continue in full force until this Agreement has terminated pursuant to its terms and all Obligations (other than contingent indemnification obligations as to which no claim has been asserted or is known to exist and any other obligations which, by their terms, are to survive the termination of this Agreement) have been satisfied in full, in cash and all commitments to extend credit pursuant to this Agreement have terminated (such date, the "**Discharge Date**"). So long as Borrowers have satisfied the Obligations (other than contingent indemnification obligations as to which no claim has been asserted or is known to exist and any other obligations which, by their terms, are to survive the termination of this Agreement), this Agreement and any remaining commitments to extend credit may be terminated prior to the Term Loan Maturity Date by Borrowers, by written notice of termination to Lenders. Those obligations that are expressly specified in this Agreement as surviving this Agreement's termination shall continue to survive notwithstanding this Agreement's termination. Promptly after the Discharge Date, Lenders shall direct Collateral Trustee to deliver evidence of the release of Collateral.

12.2 Successors and Assigns.

(a) Successors and Assigns Generally. This Agreement binds and is for the benefit of the successors and permitted assigns of each party. No Borrower may assign this Agreement or any rights or obligations under it without Lenders' prior written consent (which may be granted or withheld in each Lender's discretion). Each Lender has the right, without the consent of or notice to Borrowers, to sell, transfer, assign, negotiate, or grant participation in all or any part of, or any interest in, such Lender's obligations, rights, and benefits under this Agreement and the other Loan Documents (other than the Warrant, as to which assignment, transfer and other such actions are governed by the terms thereof).

(b) Assignment by Lenders. Each Lender may at any time assign to one or more eligible assignees all or a portion of its rights and obligations under this Agreement (including all or a portion of its commitment and the Loans at the time owing to it), subject to any restrictions on such assignment set forth in the other Loan Documents. Each such Lender shall notify the Administrative Agent of such assignment and deliver to the Administrative Agent a copy of any assignment and assumption agreement entered into in connection thereto. The Administrative Agent, acting solely for this purpose as a non-fiduciary agent of the Borrower, shall maintain at one of its offices in the United States a copy of each assignment and assumption agreement delivered to it and a register for the recordation of the names and addresses of the Lenders, and the Commitments of, and principal amounts (and stated interest) of the Loans owing to, each Lender pursuant to the terms hereof from time to time (the "**Register**"). The entries in the Register shall be conclusive absent manifest error, and the Borrower, the Administrative Agent and the Lenders shall treat each Person whose name is recorded in the Register pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement. The Register shall be available for inspection by the Borrower and any Lender, at any reasonable time and from time to time upon reasonable prior notice.

(c) Certain Prohibited Assignments. Notwithstanding the foregoing, prior to the occurrence of an Event of Default that is continuing or as required by law or any Governmental Authority having jurisdiction, Administrative Agent and each Lender shall not assign any interest in the Loan Documents to any Person who in the reasonable determination of Administrative Agent is (a) a direct competitor of the Loan Parties, whether as an operating company or direct or indirect parent with voting control over such operating company, or (b) a distressed debt fund; provided, however, the foregoing restrictions shall not apply in connection with any assignment or transfer of any interest in the Loan Documents to any Person in connection with any acquisition, merger or other consolidation of any Lender or Administrative Agent or the sale or other transfer of all or a material part of the loan portfolio or assets of any Lender or Administrative Agent.

(d) Any Lender may at any time, without the consent of, or notice to, Borrower Representative, Borrower or the Administrative Agent, sell participations to any Person (other than a natural Person, or a holding company, investment vehicle or trust for, or owned and operated for the primary benefit of, a natural Person, or Borrower Representative, Borrower or any their respective Affiliates or Subsidiaries) (each, a "**Participant**") in all or a portion of such Lender's rights and/or obligations under this Agreement (including all or a portion of its Commitment and/or the Loans owing to it); provided, that (i) such Lender's obligations under this Agreement shall remain unchanged, (ii) such Lender shall remain solely responsible to the other parties hereto for the performance of such obligations, and (iii) the Borrower, the Administrative Agent, and Lenders shall continue to deal solely and directly with such Lender in connection with such Lender's rights and obligations under this Agreement. For the avoidance of doubt, each Lender shall be responsible for the indemnity under Section 12.3 with respect to any payments made by such Lender to its Participant(s). Any agreement or instrument pursuant to which a Lender sells such a participation shall provide that such Lender shall retain the sole right to enforce this Agreement and to approve any amendment, modification or waiver of any provision of this Agreement; provided, that such agreement or instrument may provide that such Lender will not, without the consent of the Participant, agree to any amendment, modification or waiver that affects such Participant. The Borrower agrees that each Participant shall be entitled to the benefits of Section 2.7 and Section 2.5(d) (subject to the requirements and limitations therein, including the requirements under Section 2.5(d)(vi) (it being understood that the documentation required under Section 2.5(d)(vi) shall be delivered to the participating Lender)) to the same extent as if it were a Lender and had acquired its interest by assignment pursuant to paragraph (b) of this Section; provided, that such Participant shall not be entitled to receive any greater payment under Section 2.7 or Section 2.5(d), with respect to any participation, than its participating Lender would have been entitled to receive, except to the extent such entitlement to receive a greater payment results from a Change in Law that occurs after the Participant acquired the applicable participation. Each Lender that sells a participation shall, acting solely for this purpose as a non-fiduciary agent of the Borrower, maintain a register on which it enters the name and address of each Participant and the principal amounts (and stated interest) of each Participant's interest in the Term Loans or other obligations under the Loan Documents (the "**Participant Register**"); provided, that no Lender shall have any obligation to disclose all or any portion of the Participant Register (including the identity of any Participant or any information relating to a Participant's interest in any commitments, loans, letters of credit or its other obligations under any Loan Document) to any Person except to the extent that such disclosure is necessary to establish that such commitment, loan, letter of credit or other obligation is in registered form under Section 5f.103-1(c) of the United States Treasury Regulations. The entries in the Participant Register shall be conclusive absent manifest error, and such Lender shall treat each Person whose name is recorded in the Participant Register as the owner of such participation for all purposes of this Agreement notwithstanding any notice to the contrary. For the avoidance of doubt, the Administrative Agent (in its capacity as Administrative Agent) shall have no responsibility for maintaining a Participant Register.

12.3 Indemnification. Each Borrower agrees to indemnify, defend and hold Administrative Agent, Collateral Trustee and each Lender and their respective directors, officers, employees, agents, attorneys, or any other Person affiliated with or representing Lender (each, an "**Indemnified Person**") harmless against: (i) all obligations, demands, claims, and liabilities (including such claims, costs, expenses, damages and liabilities based on liability in tort, including strict liability in tort) (collectively, "**Claims**") claimed or asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (ii) all losses or expenses (including Lender Expenses) in any way suffered, incurred, or paid by such Indemnified Person as a result of, following from, consequential to, or arising from transactions among Administrative Agent, Collateral Trustee, Lenders and Borrowers (including reasonable and documented out-of-pocket attorneys' fees and expenses), except for Claims and/or losses to the extent directly caused by such Indemnified Person's gross negligence or willful misconduct. This Section 12.3 shall survive until all statutes of limitation with respect to the Claims, losses, and expenses for which indemnity is given shall have run. This Section 12.3 shall not apply with respect to Taxes other than any Taxes that represent losses, claims, damages, etc. arising from any non-Tax claim.

12.4 Borrower Liability. If any Person is joined to this Agreement as a Borrower, the following provisions shall apply: Each Borrower hereunder shall be jointly and severally obligated to repay all Loans made hereunder, regardless of which Borrower actually receives said Loan, as if each Borrower hereunder directly received all Loans. Each Borrower waives (a) any suretyship defenses available to it under the Code or any other applicable law, and (b) any right to require Collateral Trustee to: (i) proceed against any Borrower or any other person; (ii) proceed against or exhaust any security; or (iii) pursue any other remedy. Collateral Trustee may exercise or not exercise any right or remedy it has against any Borrower or any security it holds (including the right to foreclose by judicial or non-judicial sale) without affecting any Borrower's liability. Notwithstanding any other provision of this Agreement or other related document, each Borrower irrevocably waives all rights that it may have at law or in equity (including, without limitation, any law subrogating Borrower to the rights of Collateral Trustee under this Agreement) to seek contribution, indemnification or any other form of reimbursement from any other Borrower, or any other Person now or hereafter primarily or secondarily liable for any of the Obligations, for any payment made by such Borrower with respect to the Obligations in connection with this Agreement or otherwise and all rights that it might have to benefit from, or to participate in, any security for the Obligations as a result of any payment made by Borrower with respect to the Obligations in connection with this Agreement or otherwise. Any agreement providing for indemnification, reimbursement or any other arrangement prohibited under this Section shall be null and void. If any payment is made to a Borrower in contravention of this Section, such Borrower shall hold such payment in trust for Lenders and such

payment shall be promptly delivered to Collateral Trustee, for the ratable benefit of Lenders, for application to the Obligations, whether matured or unmatured.

12.5 **Time of Essence**. Time is of the essence for the performance of all Obligations in this Agreement.

12.6 **Severability of Provisions**. Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

12.7 **Correction of Loan Documents**. Administrative Agent may correct patent errors and fill in any blanks in the Loan Documents consistent with the agreement of the parties.

12.8 **Amendments in Writing; Waiver; Integration**. No purported amendment or modification of any Loan Document, or waiver, discharge or termination of any obligation under any Loan Document, shall be effective except, pursuant to an agreement in writing by the parties thereto, and in case of this Agreement, pursuant to an agreement in writing entered into by Borrowers, Administrative Agent, the Required Lenders and Collateral Trustee; provided, that Collateral Trustee's approval shall not be required for any amendment or supplement that has the effect solely of (i) adding or maintaining Collateral, securing additional Obligations that are otherwise permitted by the terms of this Agreement to be secured by the Collateral or preserving, perfecting or establishing the priority of the Liens thereon or the rights of Collateral Trustee therein; (ii) curing any ambiguity, defect or inconsistency; (iii) providing for the assumption of a Borrower's or Guarantor's Obligations under any Loan Document in the case of a merger or consolidation or sale of all or substantially all of the assets of the Borrower or such Guarantor, as applicable; (iv) making any change that would provide any additional rights or benefits to the Administrative Agent, any Lender or Collateral Trustee or that does not adversely affect the legal rights under this Agreement or any other Loan Document of Collateral Trustee; or (v) to the extent the Collateral Trust Agreement provides that Collateral Trustee's approval is not required. Without limiting the generality of the foregoing, no oral promise or statement, nor any action, inaction, delay, failure to require performance or course of conduct shall operate as, or evidence, an amendment, supplement or waiver or have any other effect on any Loan Document. Any waiver granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to, or evidence, any obligation or commitment to grant any further waiver. The Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations among the parties about the subject matter of the Loan Documents merge into the Loan Documents.

12.9 **Counterparts; Electronic Execution of Documents**. This Agreement and any other Loan Documents, except to the extent otherwise required pursuant to the terms thereof, may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement. The words "execution," "signed," "signature" and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act. Delivery of an executed counterpart of a signature page of any Loan Document by electronic means including by email delivery of a ".pdf" format data file shall be effective as delivery of an original executed counterpart of such Loan Document.

12.10 **Confidentiality**. In handling any confidential information, Administrative Agent, Collateral Trustee and each Lender agree to exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (a) to its Subsidiaries or Affiliates; (b) to prospective transferees or purchasers of any interest in the Loans; (c) as required by law, regulation, subpoena, or other order and in connection with reporting obligations applicable to Administrative Agent, Collateral Trustee or such Lender, including pursuant to the Exchange Act; (d) to Administrative Agent, Collateral Trustee or such Lender's regulators or as otherwise required in connection with any examination or audit; (e) as Administrative Agent, Collateral Trustee or such Lender considers appropriate in connection with the exercise of remedies with respect to the Obligations; and (f) to third-party service providers of Administrative Agent, Collateral Trustee or such Lender so long as such service providers are bound by confidentiality terms not more permissive than the terms hereof. Confidential information does not include information that is either: (i) in the public domain or in Administrative Agent, Collateral Trustee or any Lender's possession when disclosed to Administrative Agent, Collateral Trustee or such Lender, as applicable, or becomes part of the public domain (other than as a result of its disclosure by Administrative Agent, Collateral Trustee or such Lender in violation of this Agreement) after disclosure to Administrative Agent, Collateral Trustee or such Lender, as applicable; or (ii) disclosed to Administrative Agent, Collateral Trustee or such Lender by a third party, if Administrative Agent, Collateral Trustee or such Lender, as applicable, does not know that the third party is prohibited from disclosing the information. The provisions of this paragraph shall survive the termination of this Agreement.

12.11 **Borrower Representative**. Each of the Borrowers hereby appoints Borrower Representative to act as its exclusive agent for all purposes under the Loan Documents (including, without limitation, with respect to all matters related to the borrowing and repayment of any Loan). Each of the Borrowers acknowledges and agrees that (a) Borrower Representative may execute such documents on behalf of any Borrower as Borrower Representative deems appropriate in its sole discretion and each Borrower shall be bound by and obligated by all of the terms of any such document executed by Borrower Representative on its behalf, (b) any notice or other communication delivered hereunder to Borrower Representative shall be deemed to have been delivered to each Borrower and (c) Administrative Agent, Collateral Trustee and any Lender shall accept (and shall be permitted to rely on) any document or agreement executed by Borrower Representative on behalf of Borrowers (or any of them). Borrower must act through the Borrower Representative for all purposes under this Agreement and the other Loan Documents. Notwithstanding anything contained herein to the contrary, to the extent any provision in this Agreement requires any Borrower to interact in any manner with Administrative Agent, Collateral Trustee or any Lender, such Borrower shall do so through Borrower Representative.

12.12 **[Reserved]**.

12.13 **Captions**. The headings used in this Agreement are for convenience only and shall not affect the interpretation of this Agreement.

12.14 **Construction of Agreement**. The parties mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties caused the uncertainty to exist.

12.15 **Relationship**. The relationship of the parties to this Agreement is determined solely by the provisions of this Agreement. The parties do not intend to create any agency, partnership, joint venture, trust, fiduciary or other relationship with duties or incidents different from those of parties to an arm's-length contract.

12.16 **Third Parties**. Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any persons other than the express parties to it and their respective permitted successors and assigns; (b) relieve or discharge the obligation or liability of any person not an express party to this Agreement; or (c) give any person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

12.17 **Appointment of Collateral Trustee**

. Each Lender hereby appoints Collateral Trustee to act on behalf of Lenders as collateral agent under this Agreement and the other Loan Documents, and to hold and enforce any and all Liens on Collateral granted by any of the Loan Parties to secure any of the Obligations, all in accordance with the terms of the Collateral Trust Agreement. The provisions of this Section 12.17 are solely for the benefit of Collateral Trustee and Lenders and no Loan Party nor any other Person shall have any rights as a third party beneficiary of any of the provisions hereof. The Collateral Trustee may resign or be removed or replaced, and a successor Collateral Trustee may be appointed in accordance with the terms and subject to the conditions of the Collateral Trust Agreement.

12.18 **Appointment of Administrative Agent**.

(a) Each Lender hereby appoints Administrative Agent to act on behalf of Lenders as administrative agent under this Agreement and the other Loan Documents. The provisions of this Section 12.18 are solely for the benefit of Administrative Agent and Lenders and no Loan Party nor any other Person shall have any rights as a third party beneficiary of any of the provisions hereof. In performing its functions and duties under this Agreement, Administrative Agent does not assume and shall not be deemed to have assumed any obligation toward or relationship of agency or trust with or for any Loan Party or any other Person. Administrative Agent shall not have any duties or responsibilities except for those expressly set forth in this Agreement and the other Loan Documents, together with such powers as are reasonably related thereto. The duties of Administrative Agent shall be mechanical and administrative in nature and Administrative Agent shall not have, or be deemed to have, by reason of this Agreement, any other Loan Document or otherwise a fiduciary relationship in respect of any Lender.

(b) If Administrative Agent shall request instructions from Lenders with respect to any act or action (including failure to act) in connection with this Agreement or any other Loan Document, then Administrative Agent shall be entitled to refrain from such act or taking such action unless and until it shall have received instructions from the Required Lenders, and Administrative Agent shall incur no liability to any Person by reason of so refraining. Administrative Agent shall be fully justified in failing or refusing to take any action hereunder or under any other Loan Document for any reason. Without limiting the foregoing, no Lender shall have any right of action whatsoever against Administrative Agent as a result of Administrative Agent's acting or refraining from acting hereunder or under any other Loan Document in accordance with the instructions of Lenders.

(c) Administrative Agent may perform any and all of its duties and exercise its rights and powers hereunder by or through any one or more sub-agent s appointed by Administrative Agent. Administrative Agent and any such sub-agent may perform any and all of its duties and exercise its rights and powers by or through their respective and their respective related parties. The exculpatory provisions of this Section 12.18 shall apply to any such sub-agent and to the related parties of such Administrative Agent and any such sub-agent. No Administrative Agent shall be responsible for the negligence or misconduct of any sub-agent except to the extent that a court of competent jurisdiction determines in a final and non-appealable judgment that such Administrative Agent acted with gross negligence or willful misconduct in the selection of such sub-agents.

(d) Neither Administrative Agent nor any of its Affiliates nor any of their respective directors, officers, agents or employees shall be liable for any action taken or omitted to be taken by it or them under or in connection with this Agreement or the other Loan Documents, except for damages solely caused by its or their own gross negligence or willful misconduct as finally determined by a court of competent jurisdiction. Without limitation of the generality of the foregoing, Administrative Agent: (i) may consult with legal counsel, independent chartered accountants and other experts and consultants selected by it and shall not be liable for any action taken or omitted to be taken in good faith by it in accordance with the advice of such counsel, accountants, experts or consultants; (ii) makes no warranty or representation to any Lender and shall not be responsible to any Lender for any statements, warranties or representations made in or in connection with this Agreement or the other Loan Documents; (iii) shall not have any duty to ascertain or to inquire as to the performance or observance of any of the terms, covenants or conditions of this Agreement or the other Loan Documents on the part of any Loan Party or to inspect the Collateral (including the books and records) of any Loan Party; (iv) shall not be responsible to any Lender for the due execution, legality, validity, enforceability, genuineness, sufficiency or value of this Agreement or the other Loan Documents or any other instrument or document furnished pursuant hereto or thereto; and (v) shall incur no liability under or in respect of this Agreement or the other Loan Documents by acting upon any notice, consent, certificate or other instrument or writing (which may be by email, telecopy, telegram, cable or telex) believed by it to be genuine and signed or sent by the proper party or parties.

(e) With respect to its Commitments and Loans hereunder, Administrative Agent shall have the same rights and powers under this Agreement and the other Loan Documents as any other Lender and may exercise the same as though it were not Administrative Agent; and the term “Lender” or “Lenders” shall, unless otherwise expressly indicated, include Administrative Agent in its individual capacity (to the extent it holds any Obligations owing to Lenders or Commitments hereunder). Administrative Agent and each of its Affiliates may lend money to, invest in, and generally engage in any kind of business with, any Loan Party, any of their Affiliates and any Person who may do business with or own securities of any Loan Party or any such Affiliate, all as if Administrative Agent was not Administrative Agent and without any duty to account therefor to Lenders. Administrative Agent and its Affiliates may accept fees and other consideration from any Loan Party for services in connection with this Agreement or otherwise without having to account for the same to Lenders.

(f) Each Lender acknowledges that it has, independently and without reliance upon Administrative Agent or any other Lender, made its own credit and financial analysis of the Loan Parties and its own decision to enter into this Agreement. Each Lender also acknowledges that it will, independently and without reliance upon Administrative Agent or any other Lender and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit decisions in taking or not taking action under this Agreement. Each Lender acknowledges the potential conflict of interest of each other Lender as a result of Lenders holding disproportionate interests in the Loans, and expressly consents to, and waives any claim based upon, such conflict of interest.

(g) Each Lender agrees to indemnify Administrative Agent (to the extent not reimbursed by Loan Parties and without limiting the obligations of Loan Parties hereunder), ratably according to its respective Pro Rata Share, from and against any and all liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements of any kind or nature whatsoever which may be imposed on, incurred by, or asserted against Administrative Agent in any way relating to or arising out of this Agreement or any other Loan Document or any action taken or omitted by Administrative Agent in connection therewith; provided, however, that no Lender shall be liable for any portion of such liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements resulting solely from Administrative Agent’s gross negligence or willful misconduct as finally determined by a court of competent jurisdiction. Without limiting the foregoing, each Lender agrees to reimburse Administrative Agent promptly upon demand for its ratable share of any out-of-pocket expenses (including reasonable and documented counsel fees) incurred by Administrative Agent in connection with the preparation, execution, delivery, administration, modification, amendment or enforcement (whether through negotiations, legal proceedings or otherwise) of, or legal advice in respect of rights or responsibilities under, this Agreement and each other Loan Document, to the extent that Administrative Agent is not reimbursed for such expenses by the Loan Parties.

(h) Administrative Agent may resign at any time by giving not less than 30 days’ prior written notice thereof to Lenders, Collateral Trustee and Borrowers. Upon any such resignation, Lenders shall have the right

to appoint a successor Administrative Agent. If no successor Administrative Agent shall have been so appointed by Lenders and shall have accepted such appointment within 30 days after Administrative Agent's giving notice of resignation, then Administrative Agent may, on behalf of Lenders, appoint a successor Administrative Agent, which shall be a Lender, if a Lender is willing to accept such appointment, or otherwise shall be a commercial bank or financial institution or a subsidiary of a commercial bank or financial institution if such commercial bank or financial institution has combined capital of at least $300,000,000. If no successor Administrative Agent has been appointed pursuant to the foregoing, by the 30th day after the date such notice of resignation was given by the resigning Administrative Agent, such resignation shall become effective and Lenders shall thereafter perform all the duties of Administrative Agent hereunder until such time, if any, as Lenders appoint a successor Administrative Agent as provided above. Upon the acceptance of any appointment as Administrative Agent hereunder by a successor Administrative Agent, such successor Administrative Agent shall succeed to and become vested with all the rights, powers, privileges and duties of the resigning Administrative Agent. Upon the earlier of the acceptance of any appointment as Administrative Agent hereunder by a successor Administrative Agent or the effective date of the resigning Administrative Agent's resignation, the resigning Administrative Agent shall be discharged from its duties and obligations under this Agreement and the other Loan Documents, except that any indemnity, expense reimbursement or other rights in favor of such resigning Administrative Agent shall continue. After any resigning Administrative Agent's resignation hereunder, the provisions of this Section 12.17 shall inure to its benefit as to any actions taken or omitted to be taken by it while it was Administrative Agent under this Agreement and the other Loan Documents. Notwithstanding the foregoing, as long as K2 HealthVentures LLC is a Lender pursuant to this Agreement, K2 HealthVentures LLC shall not resign as Administrative Agent unless a successor Administrative Agent is appointed concurrently with such resignation, which successor Administrative Agent shall have the wherewithal to perform, and shall succeed to and become vested with all the rights, powers, privileges and duties of the resigning Administrative Agent under this Agreement and the other Loan Documents.

(i) In addition to any rights now or hereafter granted under applicable law and not by way of limitation of any such rights, upon the occurrence and during the continuance of any Event of Default, with the prior written consent of Administrative Agent, each Lender and each holder of any Obligation is hereby authorized at any time or from time to time, without notice to any Loan Party or to any other Person, any such notice being hereby expressly waived, to set off and to appropriate and to apply any and all balances held by it at any of its offices for the account of any Loan Party or any Subsidiary of a Loan Party (regardless of whether such balances are then due to such Loan Party or such Subsidiary) and any other properties or assets any time held or owing by that Lender or that holder to or for the credit or for the account of any Loan Party or any Subsidiary of a Loan Party against and on account of any of the Obligations which are not paid when due. Any Lender or holder of any Obligation exercising a right to set off or otherwise receiving any payment on account of the Obligations in excess of its Pro Rata Share thereof in accordance with the terms of this Agreement relating to the priority of the repayment of the Obligations shall purchase for cash (and the other Lenders or holders shall sell) such participations in each such other Lender's or holder's Pro Rata Share of the Obligations as would be necessary to cause such Lender to share the amount so set off or otherwise received with each other Lender or holder in accordance with their respective Pro Rata Shares and in accordance with the terms of this Agreement relating to the priority of the repayment of the Obligations. Each Loan Party agrees, to the fullest extent permitted by law, that (i) any Lender or holder may exercise its right to set off with respect to amounts in excess of its Pro Rata Share of the Obligations and may sell participations in such amount so set off to other Lenders and holders and (ii) any Lender or holders so purchasing a participation in the Loans made or other Obligations held by other Lenders or holders may exercise all rights of set-off, bankers' Lien, counterclaim or similar rights with respect to such participation as fully as if such Lender or holder were a direct holder of the Loans and the other Obligations in the amount of such participation. Notwithstanding the foregoing, if all or any portion of the set-off amount or payment otherwise received is thereafter recovered from Lender that has exercised the right of set-off, the purchase of participations by that Lender shall be rescinded and the purchase price restored without interest.

(j) Nothing in this Agreement or the other Loan Documents shall be deemed to require Administrative Agent to advance funds on behalf of any Lender or to relieve any Lender from its obligation to fulfill its Commitments hereunder or to prejudice any rights that the Borrowers may have against any Lender as a result of any default by such Lender hereunder. To the extent that Administrative Agent advances funds to the Borrowers on behalf of any Lender and is not reimbursed therefor on the same Business Day as such advance is made, Administrative Agent shall be entitled to retain for its account all interest accrued on such advance until reimbursed by the applicable Lender.

(k) If Administrative Agent pays an amount to a Lender under this Agreement in the belief or expectation that a related payment has been or will be received by Administrative Agent from Borrowers and such related payment is not received thereby, then Administrative Agent will be entitled to recover such amount from such Lender on demand without set-off, counterclaim or deduction of any kind.

(l) If Administrative Agent determines at any time that any amount received thereby under this Agreement shall be returned to Borrowers or paid to any other Person pursuant to any insolvency law or otherwise, then, notwithstanding any other term or condition of this Agreement or any other Loan Document, Administrative Agent will not be required to distribute any portion thereof to any Lender. In addition, each Lender will repay to Administrative

Agent on demand any portion of such amount that Administrative Agent has distributed to such Lender, together with interest at such rate, if any, as Administrative Agent is required to pay to Borrowers or such other Person, without set-off, counterclaim or deduction of any kind.

(m) Administrative Agent will use reasonable efforts to provide Lenders with any written notice of Event of Default received by Administrative Agent from, or delivered by Administrative Agent to, any Loan Party; provided, however, that Administrative Agent shall not be liable to any Lender for any failure to do so, except to the extent that such failure is attributable solely to Administrative Agent's gross negligence or willful misconduct as finally determined by a court of competent jurisdiction.

(n) Anything in this Agreement or any other Loan Document to the contrary notwithstanding, each Lender hereby agrees with each other Lender and with Administrative Agent that no Lender shall take any action to protect or enforce its rights arising out of this Agreement or any other Loan Document (including exercising any rights of set-off) without first obtaining the prior written consent of the Required Lenders, it being the intent of Lenders that any such action to protect or enforce rights under this Agreement and the other Loan Documents shall be taken in concert and at the direction or with the consent of Administrative Agent at the request of Required Lenders.

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IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the Closing Date.

BORROWER REPRESENTATIVE:

METACRINE, INC.

By
Name:
Title:

COLLATERAL TRUSTEE:

ANKURA TRUST COMPANY, LLC

By
Name:
Title:

ADMINISTRATIVE AGENT:

K2 HEALTHVENTURES LLC

By
Name:
Title:

LENDER:

K2 HEALTHVENTURES LLC

By
Name:
Title:

EXHIBIT A

DEFINITIONS

As used in this Agreement, the following capitalized terms have the following meanings:

"**Account**" means any "account" as defined in the Code with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to a Borrower.

"**Account Control Agreement**" means any control agreement entered into among the depository institution at which a Loan Party maintains a Deposit Account or the securities intermediary or commodity intermediary at which a Loan Party maintains a Securities Account or a Commodity Account, one or more Loan Parties, and Collateral Trustee pursuant to which Collateral Trustee, for the benefit of Lenders, obtains control (within the meaning of the Code) over such Deposit Account, Securities Account, or Commodity Account.

"**Account Debtor**" means any "account debtor" as defined in the Code with such additions to such term as may hereafter be made.

"**Administrative Agent**" has the meaning set forth in the preamble.

"**Affiliate**" means, with respect to any Person, each other Person that owns or controls, directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person's senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person's managers and members.

"**Agreement**" has the meaning set forth in the preamble.

"**All Source Financing Milestone**" means that Borrower Representative shall have provided evidence satisfactory to Administrative Agent that Borrower Representative has received cumulative net cash proceeds of at least $75,000,000 from all source financing transactions consummated between September 21, 2021 and December 1, 2022, including, for the avoidance of doubt, proceeds received from sales of Common Stock pursuant to an at-the-market facility, equity offerings, PIPE financings, and upfront and milestone payments actually paid in cash to Borrower Representative in connection with new partnerships.

"**Amortization Date**" means July 1, 2023; provided, that if:

(A) (i) no Event of Default has occurred and is continuing, and (ii) Borrower Representative has provided evidence satisfactory to Administrative Agent that Borrowers have achieved each of (x) the Refinancing Second Tranche-A Milestone as of June 30, 2022 and (y) the All Source Financing Milestone, the Amortization Date shall be January 1, 2024; and

(B) (i) the Amortization Date is extended to January 1, 2024 pursuant to clause (A) above, (ii) no Event of Default has occurred and is continuing and (iii) Borrower Representative has provided evidence satisfactory to Administrative Agent that Borrowers have achieved all of the requirements of the Refinancing Third Tranche Milestone, the Amortization Date shall be July 1, 2024.

"**Anti-Terrorism Order**" means Executive Order No. 13,224 as of September 24, 2001, Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit or Support Terrorism, 66 U.S. Fed. Reg. 49,079 (2001), as amended.

"**Applicable Rate**" means a variable annual rate equal to the greater of (i) the Prime Rate plus 4.50% and (ii) 7.75%.

"**Automatic Payment Authorization**" means the Automatic Payment Authorization in substantially the form of Exhibit F.

"**Board**" means, with respect to any Person, the board of directors, board of managers, managers or other similar bodies or authorities performing similar governing functions for such Person.

"**Borrower**" and "**Borrowers**" has the meaning set forth in the preamble.

"**Borrower Representative**" has the meaning set forth in the preamble.

"**Borrowers' Books**" are all of each Borrower's books and records including ledgers, federal and state tax returns, records regarding such Borrower's assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

"**Business Day**" means any day that is not a Saturday, Sunday or a day on which commercial banks in the State of New York are required or permitted to be closed.

"**Cash Equivalents**" means (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof having maturities of not more than one year from the date of acquisition; (b) commercial paper maturing no more than one year after its creation and having the highest rating from either Standard & Poor's Ratings Group or Moody's Investors Service, Inc.; (c) certificates of deposit issued by any bank with assets of at least $500,000,000 maturing no more than one year from the date of investment therein; and (d) money market funds at least 95% of the assets of which constitute Cash Equivalents of the kinds described in clauses (a) through (c) of this definition.

"**Change in Control**" means any of the following (or any combination of the following) whether arising from any single transaction event or series of related transactions or events that, individually or in the aggregate, result in: (a) the holders of Borrower Representative's Equity Interests who were holders of Equity Interest as of the Second Amendment Effective Date, ceasing to own at least 51% of the Voting Stock of Borrower Representative; (b) any "person" or "group" (within the meaning of Section 13(d) and 14(d)(2) of the Exchange Act) becoming the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of a sufficient number of Equity Interests of Borrower Representative ordinarily entitled to vote in the election of directors, empowering such "person" or "group" to elect a majority of the members of the Board of Borrower Representative, who did not have such power before such transaction; (c) the Transfer of all or substantially all assets of Borrowers or of a material business line of Borrowers; or (d) Borrower Representative ceasing to own and control, free and clear of any Liens (other than Permitted Liens), directly or indirectly, all of the Equity Interests in each of its Subsidiaries, or failing to have the power to direct or cause the direction of the management and policies of each such Subsidiary.

"**Change in Law**" means the occurrence, after the date of this Agreement, of any of the following: (a) the adoption or taking effect of any law, rule, regulation or treaty, (b) any change in any law, rule, regulation or treaty or in the administration, interpretation, implementation or application thereof by any Governmental Authority or (c) the making or issuance of any request, rule, guideline or directive (whether or not having the force of law) by any Governmental Authority.

"**Claims**" has the meaning set forth in Section 12.3.

"**Closing Date**" has the meaning set forth in the preamble.

"**Code**" means the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of New York; provided, that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; provided, further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Collateral Trustee's Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of New York, the term "**Code**" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

"**Collateral**" means any and all properties, rights and assets of each Borrower described on Exhibit B, and any collateral securing the Obligations pursuant to any guaranty or pursuant to any other Loan Document.

"**Collateral Access Agreement**" means an agreement with respect to a Loan Party's leased location or bailee location, in each case in form and substance reasonably satisfactory to Administrative Agent and Collateral Trustee.

"**Collateral Account**" means any Deposit Account, Securities Account, or Commodity Account of a Loan Party, in each case other than an Excluded Account.

"**Collateral Trust Agreement**" means that certain Collateral Trust Agreement, dated as of the Closing Date, by and among Collateral Trustee and Lenders, as amended, restated, supplemented or otherwise modified from time to time.

"**Collateral Trustee**" has the meaning set forth in the preamble of this Agreement.

"**Commitment**" means, as to any Lender, the aggregate principal amount of Loans committed to be made by such Lender, as set forth on Schedule 1 hereto.

"**Commodity Account**" means any "commodity account" as defined in the Code with such additions to such term as may hereafter be made.

"**Common Stock**" means the Borrower Representative's common stock, $0.001 par value per share.

"**Compliance Certificate**" means that certain certificate in the form attached hereto as Exhibit D.

"**Connection Income Taxes**" means Other Connection Taxes that are imposed on or measured by net income (however denominated) or that are franchise Taxes or branch profits Taxes.

"**Contingent Obligation**" means, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation, in each case, directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

"**Conversion Amount**" has the meaning set forth in Section 2.2(e)(i).

"**Conversion Election Notice**" means a notice in the form attached hereto as Exhibit H.

"**Conversion Price**" means $3.86; provided that in the event that on or after the Second Amendment Effective Date, a stock split, stock combination, reclassification, payment of stock dividend, recapitalization or other similar transaction of such character that the shares of Common Stock shall be changed into or become exchangeable for a larger or small number of shares is consummated (each, a "**Stock Event**"), the Conversion Price shall be proportionately increased or decreased as necessary to reflect the proportionate change in shares of Common Stock issued and outstanding as a result of such Stock Event.

"**Conversion Shares**" has the meaning set forth in Section 2.2(e)(i).

"**Copyrights**" means any and all copyright rights, copyright applications, copyright registrations and like protections of a Person in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret.

"**Default**" means any circumstance, event or condition that, with the giving of any notice, the passage of time, or both, would be an Event of Default.

"**Default Rate**" has the meaning set forth in Section 2.3(b).

"**Deposit Account**" means any "deposit account" as defined in the Code with such additions to such term as may hereafter be made, and includes any checking account, savings account or certificate of deposit.

"**Designated Holder**" means a Lender or any Affiliate designated by a Lender in any Conversion Election Notice; provided that the Designated Holder for K2 HealthVentures LLC and any successor, transferee or assignee thereof as Lender, which is an affiliate of K2 HealthVentures LLC, shall be K2 HealthVentures Equity Trust LLC.

"**Dollars**," "**dollars**" or use of the sign "**$**" means only lawful money of the United States and not any other currency, regardless of whether that currency uses the "$" sign to denote its currency or may be readily converted into lawful money of the United States.

"**Domestic Subsidiary**" means any Subsidiary organized under the laws of the United States of America, any State thereof or the District of Columbia.

"**Equipment**" means all "equipment" as defined in the Code with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

"**Equity Interests**" means, with respect to any Person, any of the shares of capital stock of (or other ownership, membership or profit interests in) such Person, any of the warrants, options or other rights for the purchase or acquisition from such Person of shares of capital stock of (or other ownership, membership or profit interests in) such Person, any of the securities convertible into or exchangeable for shares of capital stock of (or other ownership, membership or profit interests in) such Person or warrants, rights or options for the purchase or acquisition from such Person of such shares (or such other interests), and any of the other ownership, membership or profit interests in such Person (including partnership, member or trust interests therein), whether voting or nonvoting, and whether or not such shares, warrants, options, rights or other interests are outstanding on any date of determination.

"**ERISA**" means the Employee Retirement Income Security Act of 1974 and its regulations, in each case as amended.

"**Event of Default**" has the meaning set forth in Section 8.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

"**Excluded Account**" means (a) any Deposit Account exclusively used for payroll, withholding tax and benefit payments to or for the benefit of Borrower Representative's employees; provided, that the aggregate balance therein shall not exceed an amount of such payments to be paid in the then-next payroll period, and (b) Deposit Accounts exclusively used for cash collateral relating to letter of credit obligations and identified to Administrative Agent as such; provided, that the aggregate balance therein shall not exceed $100,000 in the aggregate at any time.

"**Excluded Foreign Subsidiary**" means, with respect to any Loan Party, any Subsidiary of such Loan Party, at any date of determination, (a) that is a "controlled foreign corporation" as defined in Section 957 of the IRC, (b) that is a direct or indirect Subsidiary of a "controlled foreign corporation" as defined in Section 957 of the IRC, or (c) substantially all of the assets of which are Equity Interests in one or more "controlled foreign corporations" as defined in Section 957 of the IRC.

"**Excluded Locations**" means the following locations where Collateral may be located from time to time: (a) locations where mobile office equipment (e.g. laptops, mobile phones and the like) may be located with employees in the Ordinary Course of Business, (b) clinical trial sites and contract research organizations, and (c) other locations where, in the aggregate for all such locations, less than $250,000 of Collateral is located.

"**Excluded Taxes**" means any of the following Taxes imposed on or with respect to a Recipient or required to be withheld or deducted from a payment to a Recipient, (a) Taxes imposed on or measured by net income (however denominated), franchise Taxes, and branch profits Taxes, in each case, (i) imposed as a result of such Recipient being organized under the laws of, or having its principal office or, in the case of any Lender, its applicable lending office located in, the jurisdiction imposing such Tax (or any political subdivision thereof) or (ii) that are Other Connection Taxes, (b) in the case of a Lender, U.S. federal withholding Taxes imposed on amounts payable to or for the account of such Lender with respect to an applicable interest in a Loan or Commitment pursuant to a law in effect on the date on which (i) such Lender acquires such interest in the Loan or Commitment or (ii) such Lender changes its lending office, except in each case to the extent that amounts with respect to such Taxes were payable either to such Lender's assignor immediately before such Lender became a party hereto or to such Lender immediately before it changed its lending office, (c) Taxes attributable to such Recipient's failure to comply with Section 2.5(d)(vi) and (d) any U.S. federal withholding Taxes imposed under FATCA.

"**FATCA**" means Sections 1471 through 1474 of the IRC, as of the date of this Agreement (or any amended or successor version that is substantively comparable and not materially more onerous to comply with), any current or future regulations or official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(1) of the

IRC and any fiscal or regulatory legislation, rules or practices adopted pursuant to any intergovernmental agreement, treaty or convention among Governmental Authorities and implementing such Sections of the IRC.

"**Federal Reserve Board**" means the Board of Governors of the Federal Reserve System, or any successor thereto.

"**Fee Letter**" means that certain letter agreement, dated as of the date hereof, by and among Borrower, Administrative Agent and Lenders, as amended, modified, supplemented, extended or restated from time to time, including the amendment and restatement of the Fee Letter dated as of the Second Amendment Effective Date.

"**First-Tier Foreign Subsidiary**" means any Excluded Foreign Subsidiary, the capital stock of which is owned directly by any Loan Party.

"**Foreign Subsidiary**" means any Subsidiary that is not a Domestic Subsidiary and any Subsidiary of a Subsidiary that is not a Domestic Subsidiary

"**Funding Date**" means any date on which a Term Loan is made to or for the account of a Borrower which shall be a Business Day.

"**GAAP**" means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, which are applicable to the circumstances as of the date of determination; provided, however, that if there occurs after the Closing Date any change in GAAP that affects in any respect the calculation of any covenant or threshold in this Agreement, Lenders and Borrowers shall negotiate in good faith amendments to the provisions of this Agreement that relate to the calculation of such covenant or threshold with the intent of having the respective positions of Lender and Borrowers after such change in GAAP conform as nearly as possible to their respective positions as of the Closing Date, and, until any such amendments have been agreed upon, such covenants and thresholds shall be calculated as if no such change in GAAP has occurred.

"**General Intangibles**" means all "general intangibles" as defined in the Code in effect on the Closing Date with such additions to such term as may hereafter be made, and includes without limitation, all Intellectual Property, claims, income and other tax refunds, security and other deposits, payment intangibles, contract rights, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including without limitation key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

"**Governmental Approval**" means any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority, including for the testing, manufacturing, marketing and sales of its Product.

"**Governmental Authority**" means any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

"**Guarantor**" means any Person providing a Guaranty with respect to the Obligations or providing collateral, security or other credit support for all or any portion of the Obligations. For the avoidance of doubt, no Excluded Foreign Subsidiary shall be a Guarantor.

"**Guaranty**" means any guarantee of all or any part of the Obligations, as the same may from time to time be amended, restated, modified or otherwise supplemented.

"**Indebtedness**" means (a) indebtedness for borrowed money or the deferred price of property or services, (b) any reimbursement and other obligations for surety bonds and letters of credit, (c) obligations evidenced by notes, bonds, debentures or similar instruments, (d) capital lease obligations, and (e) Contingent Obligations.

"**Indemnified Person**" has the meaning set forth in Section 12.3.

"**Indemnified Taxes**" means (a) Taxes, other than Excluded Taxes, imposed on or with respect to any payment made by or on account of any obligation of the Borrower under any Loan Document (other than the Warrant) and (b) to the extent not otherwise described in (a), Other Taxes (other than Taxes relating to the Warrant).

"**Insolvency Proceeding**" means any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"**Intellectual Property**" means, with respect to any Loan Party (or, as applicable, any of its Subsidiaries), all of such Loan Party's or Subsidiary's right, title, and interest in and to the following:

(a) its Copyrights, Trademarks and Patents;

(b) any and all trade secrets and trade secret rights, including, without limitation, any rights to unpatented inventions, know-how, operating manuals;

(c) any and all source code;

(d) any and all design rights which may be available to such Person;

(e) any and all claims for damages by way of past, present and future infringement of any of the foregoing, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the Intellectual Property rights identified above; and

(f) all amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents.

"**Inventory**" means all "inventory" as defined in the Code in effect on the Closing Date with such additions to such term as may hereafter be made.

"**Investment**" means any beneficial ownership interest in any Person (including stock, partnership interest or other securities or Equity Interests), and any loan, advance or capital contribution to any Person, or the acquisition of all or substantially all of the assets or properties of another Person.

"**IRC**" means the Internal Revenue Code of 1986, as amended

"**Lender**" has the meaning set forth in the preamble.

"**Lender Expenses**" means all reasonable and documented audit fees and expenses, costs, and expenses (including reasonable and documented out-of-pocket attorneys' fees and expenses) of Administrative Agent or Lenders for preparing, amending, negotiating, administering, defending and enforcing the Loan Documents (including, without limitation, those incurred in connection with appeals or Insolvency Proceedings) or otherwise incurred with respect to a Loan Party, including all costs, expenses and other amounts required to be paid by any Lender or the Administrative Agent in accordance with the Collateral Trust Agreement.

"**Lien**" means a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

"**Loan Documents**" means, collectively, this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the Warrant, the Collateral Trust Agreement, the Fee Letter, the Automatic Payment Authorization, the Account Control Agreements, the Collateral Access Agreements, any Subordination Agreement, any note, or notes or guaranties executed by a Loan Party, and any other present or future agreement by a Loan Party with or for the benefit of Collateral Trustee, the Administrative Agent or any Lender in connection with this Agreement, all as amended, modified, supplemented, extended or restated from time to time.

"**Loan Party**" or "**Loan Parties**" means, each Borrower from time to time party hereto, and any Guarantor, if any.

"**Loan Request**" means a request for a Loan pursuant to this Agreement in substantially the form attached hereto as Exhibit C.

"**Loans**" means, collectively, the Term Loans, and any other loan from time to time made under this Agreement, and "**Loan**" means any of the foregoing.

"**Margin Stock**" has the meaning set forth in Section 5.11(b).

"**Material Adverse Effect**" means: (a) a material impairment in the perfection or priority of the Lien in the Collateral pursuant to the Loan Documents or in the value of the Collateral; or (b) a material adverse effect upon: (i) the business, operations, properties, assets or financial condition of the Loan Parties as a whole; (ii) the prospect of repayment of any part of the Obligations; or (iii) the ability to enforce any rights or remedies with respect to any Obligations, in each case, as determined by Administrative Agent.

"**Maximum Rate**" has the meaning set forth in Section 2.3(d).

"**Obligations**" means all of Borrowers' and each other Loan Party's obligations to pay the Loans when due, including principal, interest, fees, Lender Expenses, the fees pursuant to the Fee Letter, and any other amounts due to be paid by a Borrower or Loan Party, and each Borrower's and Loan Party's obligation to perform its duties under the Loan Documents (other than the Warrant), and any other debts, liabilities and other amounts any Borrower or Loan Party owes to any Lender at any time, whether under the Loan Documents or otherwise (but excluding obligations arising under the Warrant), including, without limitation, interest or Lender Expenses accruing after Insolvency Proceedings begin (whether or not allowed), and any debts, liabilities, or obligations of any Borrower or Loan Party assigned to any Lender, which shall be treated as secured or administrative expenses in the Insolvency Proceedings to the extent permitted by applicable law. Notwithstanding the foregoing, "Obligations" does not include any obligations arising under any right to invest.

"**OFAC**" has the meaning set forth in Section 5.11(c).

"**Operating Documents**" means, for any Person, such Person's formation documents and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement or operating agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments, restatements and modifications thereto.

"**Ordinary Course of Business**" means, in respect of any transaction involving any Person, the ordinary course of such Person's business as conducted by any such Person in accordance with (a) the usual and customary customs and practices in the kind of business in which such Person is engaged, and (b) the past practice and operations of such Person, and in each case, undertaken by such Person in good faith and not for purposes of evading any covenant or restriction in any Loan Document.

"**Other Connection Taxes**" means, with respect to any Recipient, Taxes imposed as a result of a present or former connection between such Recipient and the jurisdiction imposing such Tax (other than connections arising from such Recipient having executed, delivered, become a party to, performed its obligations under, received payments under, received or perfected a security interest under, engaged in any other transaction pursuant to or enforced any Loan Document, or sold or assigned an interest in any Loan or Loan Document).

"**Other Taxes**" means all present or future stamp, court or documentary, intangible, recording, filing or similar Taxes that arise from any payment made under, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a security interest under, or otherwise with respect to, any Loan Document (other than the Warrant), except any such Taxes that are Other Connection Taxes imposed with respect to an assignment.

"**Participant**" has the meaning set forth in Section 12.2(d).

"**Participant Register**" has the meaning set forth in Section 12.2(d).

"**Patents**" means all patents, patent applications and like protections of a Person including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same and all rights therein provided by international treaties or conventions.

"**Payment Date**" means the first calendar day of each month.

"**Perfection Certificate**" has the meaning set forth in Section 5.1.

"**Permitted Indebtedness**" means:

(a) each Loan Party's Indebtedness under this Agreement and the other Loan Documents;

(b) Indebtedness existing on the Second Amendment Effective Date and shown on the Perfection Certificate; provided, that (i) to the extent the amount of such type of Indebtedness is limited pursuant to a clause of this defined term, amounts existing on the Second Amendment Effective Date or any permitted refinancing thereof shall count towards such limit, (ii) to the extent such Indebtedness is required to be repaid on the Second Amendment Effective Date, in accordance with a payoff letter delivered as a condition to closing, such Indebtedness shall not constitute Permitted Indebtedness after such repayment, and (iii) to the extent any such Indebtedness is required to be made subject to the terms of a Subordination Agreement as of the Second Amendment Effective Date or thereafter, pursuant to the terms of this Agreement, such Indebtedness shall be permitted only to the extent the applicable Subordination Agreement is in effect;

(c) Subordinated Debt;

(d) unsecured Indebtedness to trade creditors incurred in the Ordinary Course of Business;

(e) Indebtedness for unsecured credit cards in an aggregate amount not to exceed $250,000 outstanding at any time;

(f) reimbursement obligations arising from letters of credit issued by financial institutions and incurred in the Ordinary Course of Business; provided, that the aggregate amount of such obligations shall not exceed $100,000 at any time;

(g) Indebtedness incurred as a result of endorsing negotiable instruments received in the Ordinary Course of Business;

(h) Indebtedness secured by Liens permitted under clause (c) of the definition of "Permitted Liens" hereunder;

(i) Indebtedness not otherwise permitted pursuant to this defined term, in an aggregate amount outstanding not to exceed $250,000; and

(j) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness described in clause (b) and clauses (d) through (h) above; provided, that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon a Borrower or any of its Subsidiaries, as the case may be.

"**Permitted Investments**" means:

(a) Investments (including, without limitation, Subsidiaries) existing on the Second Amendment Effective Date and shown on the Perfection Certificate;

(b) (i) Investments consisting of Cash Equivalents, and (ii) any Investments permitted by Borrower Representative's investment policy, as amended from time to time; provided, that such investment policy (and any such amendment thereto) has been approved in writing by Administrative Agent;

(c) Investments consisting of repurchases of Borrower Representative's Equity Interests from former employees, consultants, officers and directors of Borrower Representative to the extent permitted under Section 7.7;

(d) Investments among Loan Parties, and Investments in Subsidiaries which are not Loan Parties in an aggregate amount per fiscal year not to exceed $100,000;

(e) Investments by Borrower in any Foreign Subsidiary not to exceed each fiscal quarter's projected operating plan for such Foreign Subsidiary; provided, that such projected operating plan shall have been approved in writing by Administrative Agent;

(f) Investments not to exceed $250,000 outstanding in the aggregate at any time consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the Ordinary Course of Business, and (ii) loans not involving the net transfer of cash proceeds to employees, officers or directors relating to the purchase of Equity Interests of Borrower Representative pursuant to employee stock purchase plans or other similar agreements approved by Borrower Representative's Board;

(g) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the Ordinary Course of Business;

(h) Investments consisting of Deposit Accounts in which Collateral Trustee has a perfected security interest;

(i) Investments not otherwise permitted pursuant to this defined term, in an aggregate amount not to exceed $250,000 per fiscal year; and

(j) Investments consisting of accounts receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the Ordinary Course of Business; provided, that this subsection (k) shall not apply to Investments of a Loan Party in any Subsidiary.

"**Permitted Liens**" means:

(a) Liens arising under this Agreement and the other Loan Documents;

(b) Liens existing on the Second Amendment Effective Date and shown on the Perfection Certificate; provided, that (i) to the extent the amount of Indebtedness secured by such type of Lien is limited pursuant to a clause of this defined term, amounts existing on the Second Amendment Effective Date or any permitted refinancing thereof shall count towards such limit, (ii) to the extent the Indebtedness secured by such a Lien is required to be repaid on the Second Amendment Effective Date, in accordance with a payoff letter delivered as a condition to closing, such Lien shall not constitute Permitted Lien after the repayment of the associated Indebtedness, and (iii) to the extent any such Lien is required to be made subject to the terms of a Subordination Agreement as of the Second Amendment Effective Date or thereafter, pursuant to the terms of this Agreement, such Lien shall be permitted only to the extent the applicable Subordination Agreement is in effect;

(c) purchase money Liens (i) on Equipment acquired or held by a Loan Party or Subsidiary thereof incurred for financing the acquisition of the Equipment, or (ii) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the Equipment, in each case, securing no more than $500,000 in the aggregate amount outstanding;

(d) Liens for taxes, fees, assessments or other government charges or levies, either (i) not yet due and payable or (ii) being contested in good faith by appropriate proceedings diligently conducted and for which such Loan Party or Subsidiary maintains adequate reserves on its books;

(e) leases or subleases of real property granted in the Ordinary Course of Business of such Person, and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the Ordinary Course of Business of such Person;

(f) Liens of carriers, warehousemen, suppliers, or other Persons that are possessory in nature arising in the Ordinary Course of Business so long as such Liens attach only to Inventory, which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings which proceedings have the effect of preventing the forfeiture or sale of the property subject thereto;

(g) Liens to secure payment of workers' compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the Ordinary Course of Business (other than Liens imposed by ERISA);

(h) deposits or pledges of cash to secure bids, tenders, contracts (other than contracts for the payment of money), leases, surety and appeal bonds and other obligations of a like nature arising in the Ordinary Course of Business, in an aggregate amount not exceeding $250,000 at any time;

(i) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default;

(j) Liens in favor of other financial institutions arising in connection with a Deposit Account or Securities Account of a Loan Party or Subsidiary thereof held at such institutions; provided, that Collateral Trustee has a perfected security interest in such Deposit Account, or the securities maintained therein and Collateral Trustee has received an Account Control Agreement with respect thereto to the extent required pursuant to Section 6.6 of this Agreement;

(k) licenses of Intellectual Property which constitute a Permitted Transfer;

(l) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in clauses (a) through (d), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase; and

(m) Liens on cash collateral maintained in a separate Collateral Account maintained exclusively for such purpose and identified to Administrative Agent as such, securing reimbursement obligations in connection with letters of credit permitted under clause (f) of the definition of "Permitted Indebtedness"; provided, that the aggregate amount of such cash collateral does not exceed not exceed $100,000 at any time.

"**Permitted Locations**" means, collectively, the following locations where Collateral may be located from time to time: (a) locations identified in the Perfection Certificate, (b) locations with respect to which Borrowers have complied with the requirements of Section 6.11, and (c) the Excluded Locations.

"**Permitted Transfers**" means

(a) sales of Inventory by a Loan Party or any of its Subsidiaries in the Ordinary Course of Business;

(b) non-exclusive licenses and similar arrangements for the use of Intellectual Property of a Loan Party or any of its Subsidiaries in the Ordinary Course of Business;

(c) dispositions of worn-out, obsolete or surplus Equipment in the Ordinary Course of Business;

(d) Transfers consisting of the granting of Permitted Liens and the making of Permitted Investments;

(e) the use or transfer of money or Cash Equivalents in the Ordinary Course of Business for the payment of expenses in the Ordinary Course of Business and in a manner that is not prohibited by the Loan Documents; and

(f) other Transfers of assets having a fair market value of not more than $100,000 per fiscal year of Borrower Representative.

"**Person**" means any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

"**Prime Rate**" means, at any time, the greater of (i) the rate of interest noted in The Wall Street Journal, Money Rates section, as the "Prime Rate", and (ii) 5.25%. In the event that The Wall Street Journal quotes more than one rate,

or a range of rates, as the Prime Rate, then the Prime Rate shall mean the average of the quoted rates. In the event that The Wall Street Journal ceases to publish a Prime Rate, then the Prime Rate shall be the average of the three largest U.S. money center commercial banks, as determined by Lenders.

"**Pro Rata Share**" means, with respect to any Lender and as of any date of determination, the percentage obtained by dividing (i) the aggregate Commitments of such Lender by (ii) the aggregate Commitments of all Lenders; provided, that to the extent any Commitment has expired or been terminated, with respect to such Commitment, the applicable outstanding balance of the Loans made pursuant to such Commitment held by such Lender and all the Lenders, respectively, shall be used in lieu of the amount of such Commitment; provided, further, that with respect to all matters relating to a particular Loan, the Commitment or outstanding balance of the applicable Loan, shall be used in lieu of the aggregate Commitment or outstanding balance of all Loans in the foregoing calculation. "Ratable" and related terms shall mean, determined by reference to such Lender's Pro Rata Share.

"**Products**" means any products manufactured, sold, developed, tested or marketed by a Loan Party or any of its Subsidiaries.

"**Qualified Financing**" has the meaning set forth in Section 6.13(b).

"**Recipient**" means (a) the Administrative Agent, (b) Collateral Trustee and (c) any Lender, as applicable.

"**Refinanced Loan Balance**" means, collectively, the Term Loans made pursuant to this Agreement as in effect prior to the Second Amendment Effective Date, and all accrued interest and other Obligations due on the Second Amendment Effective Date, all as set forth in detail in the disbursement letter delivered on the Second Amendment Effective Date.

"**Refinancing First Tranche Term Loan Commitment**" means, as to any Lender, the aggregate principal amount of Refinancing First Tranche Term Loans committed to be made by such Lender, as set forth on Schedule 1.

"**Refinancing First Tranche Term Loans**" has the meaning set forth in Section 2.2(a).

"**Refinancing Second Tranche-A Availability Period**" means the period commencing on the Second Amendment Effective Date and ending on June 30, 2022.

"**Refinancing Second Tranche-A Milestone**" means that Borrower Representative shall have provided evidence satisfactory to Administrative Agent, in Administrative Agent's reasonable discretion, that Borrower Representative has achieved each of the following: (a) [***]; and (b) [***].

"**Refinancing Second Tranche-A Term Loan Commitment**" means, as to any Lender, the aggregate principal amount of Refinancing Second Tranche-A Term Loans committed to be made by such Lender, as set forth on Schedule 1 hereto.

"**Refinancing Second Tranche-A Term Loans**" has the meaning set forth in Section 2.2(a).

"**Refinancing Second Tranche-B Availability Period**" means the period commencing on the date that the Refinancing Second Tranche-A Milestone is fully achieved and ending on December 31, 2022.

"**Refinancing Second Tranche-B Milestone**" means that (a) [***], and (b) [***].

"**Refinancing Second Tranche-B Term Loan Commitment**" means, as to any Lender, the aggregate principal amount of Refinancing Second Tranche-B Term Loans committed to be made by such Lender, as set forth on Schedule 1 hereto.

"**Refinancing Second Tranche-B Term Loans**" has the meaning set forth in Section 2.2(a).

"**Refinancing Second Tranche Term Loans**" has the meaning set forth in Section 2.2(a).

"**Refinancing Third Tranche Availability Period**" means the period commencing on April 1, 2023 and ending on September 30, 2023.

"**Refinancing Third Tranche Milestone**" means that Borrower Representative shall have provided evidence satisfactory to Administrative Agent, in Administrative Agent's reasonable discretion, that Borrower Representative has achieved at least two of the milestones under the following clauses (a), (b) and (c): (a) [***]; (b) [***]; and/or (c) [***].

"**Refinancing Third Tranche Term Loan Commitment**" means, as to any Lender, the aggregate principal amount of Refinancing Third Tranche Term Loans committed to be made by such Lender, as set forth on Schedule 1 hereto.

"**Refinancing Third Tranche Term Loans**" has the meaning set forth in Section 2.2(a).

"**Refinancing Fourth Tranche Availability Period**" means the period commencing on the Second Amendment Effective Date and ending on the Amortization Date.

"**Refinancing Fourth Tranche Term Loan Commitment**" means, as to any Lender, the aggregate principal amount of Refinancing Fourth Tranche Term Loans committed to be made by such Lender, as set forth on Schedule 1.

"**Refinancing Fourth Tranche Term Loans**" has the meaning set forth in Section 2.2(a).

"**Register**" has the meaning set forth in Section 12.2(b).

"**Registered Organization**" means any "registered organization" as defined in the Code with such additions to such term as may hereafter be made.

"**Required Lenders**" means, as of any date of determination, Lenders holding more than 50% of the sum of aggregate principal amount of all Loans outstanding and the aggregate amount of all unfunded commitments to make Loans, at such date of determination.

"**Requirement of Law**" means as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

"**Responsible Officer**" means with respect to any Person, any of the Chief Executive Officer, President or Chief Financial Officer of such Person. Unless the context otherwise requires, each reference to a Responsible Officer herein shall be a reference to a Responsible Officer of Borrower Representative.

"**Restricted License**" means any material in-bound license or other similar material agreement (other than ordinary course customer contracts, off the shelf software licenses, licenses that are commercially available to the public, and open source licenses) to which a Loan Party or Subsidiary is a party (a) that prohibits or otherwise restricts such Loan Party or Subsidiary from granting a security interest in its interest in such license or agreement or in any other property, or (b) for which a default under, or termination of which, could reasonably be expected to interfere with Collateral Trustee's right to sell any Collateral.

"**Second Amendment Effective Date**" means October 1, 2021.

"**SEC**" has the meaning set forth in Section 2.2(e)(iii).

"**Securities Account**" means any "securities account" as defined in the Code with such additions to such term as may hereafter be made.

"**Securities Act**" means the Securities Act of 1934, as amended.

"**Security Instrument**" means any security agreement, assignment, pledge agreement, financing or other similar statement or notice, continuation statement, other agreement or instrument, or any amendment or supplement to any thereof, creating, governing or providing for, evidencing or perfecting any security interest or Lien.

"**Shares**" means all of the issued and outstanding Equity Interests owned or held of record by a Loan Party or other Loan Party in each of its Subsidiaries.

"**Subordinated Debt**" means Indebtedness on terms and to holders satisfactory to Administrative Agent and incurred by a Loan Party that is subordinated in writing to all of the Obligations, pursuant to a Subordination Agreement.

"**Subordination Agreement**" means any subordination agreement in form and substance satisfactory to Administrative Agent entered into from time to time with respect to Subordinated Debt.

"**Subsidiary**" means, with respect to any Person, any corporation, partnership, limited liability company or joint venture in which (i) any general partnership interest or (ii) more than 50% of the stock, limited liability company interest, joint venture interest or other Equity Interest which by the terms thereof has the ordinary voting power to elect the Board of that Person, at the time as of which any determination is being made, is owned or controlled by such Person, directly or indirectly. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a Subsidiary of Borrower.

"**Taxes**" means all present or future taxes, levies, imposts, duties, deductions, withholdings (including backup withholding), assessments, fees or other charges imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto.

"**Term Loans**" means, as applicable: (a) through the Second Amendment Effective Date, the Loans made prior to the Second Amendment Effective Date pursuant to this Agreement as then in effect; and (b) on the Second Amendment Effective Date and at all times thereafter, the Refinancing Term Loans.

"**Term Loan Maturity Date**" means April 1, 2025.

"**Trademarks**" means any trademark and servicemark rights of a Person, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business connected with and symbolized by such trademarks.

"**Transfer**" has the meaning set forth in Section 7.1.

"**U.S. Person**" means any Person that is a "United States person" as defined in Section 7701(a)(30) of the IRC.

"**Unrestricted Securities**" means the Conversion Shares, (a) following any sale of the Conversion Shares pursuant to an effective registration statement under the Securities Act covering the sale or resale of the Conversion Shares, (b) following any sale of the Conversion Shares pursuant to Rule 144 without restriction, or (c) if such Conversion Shares, as the case may be, are eligible for sale under Rule 144(b)(1) without restriction, (d) if such legend is not required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the SEC).

"**Voting Stock**" means, with respect to any Person, all classes of Equity Interests issued by such Person the holders of which are ordinarily, in the absence of contingencies, entitled to vote for the election of directors or managers (or Persons performing similar functions) of such Person, even though the right so to vote has been suspended by the happening of such a contingency.

"**Warrant**" means, collectively, (a) each Warrant to Purchase Preferred Stock dated as of the Closing Date and (b) each Warrant to Purchase Common Stock dated as of the Second Amendment Effective Date, all as executed by Borrower Representative in favor of each Lender, as amended, modified, supplemented, extended or restated from time to time.

"**Withholding Agent**" means any Loan Party and the Administrative Agent.

EXHIBIT B

COLLATERAL DESCRIPTION

The Collateral consists of all of each Borrower's right, title and interest in and to the following personal property wherever located, whether now owned or existing or hereafter acquired, created or arising:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles (except as noted below), commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and all such Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds (both cash and non-cash) and insurance proceeds of any or all of the foregoing.

The Collateral does not include any Intellectual Property; provided, however, the Collateral shall include all Accounts and all proceeds of Intellectual Property; provided, further that if a judicial authority (including a U.S. Bankruptcy Court) would hold that a security interest in the underlying Intellectual Property is necessary to have a security interest in such Accounts and such property that are proceeds of Intellectual Property, then the Collateral shall automatically, and effective as of August 27, 2019, include the Intellectual Property to the extent necessary to permit perfection of Collateral Trustee's security interest in such Accounts and such other property of the applicable Borrower that are proceeds of the Intellectual Property. For the avoidance of doubt, the Collateral does not include (i) more than 65% of the voting capital stock of any First-Tier Foreign Subsidiary, (ii) any Equity Interests in any Excluded Foreign Subsidiary other than a First-Tier Excluded Foreign Subsidiary, and (iii) any asset directly or indirectly owned by any Excluded Foreign Subsidiary.

Pursuant to the terms of a certain negative pledge arrangement with Collateral Trustee and Lenders, Borrower has agreed not to encumber any of its Intellectual Property.

EXHIBIT C

LOAN REQUEST

Date: [●]

Reference is made to that certain Loan and Security Agreement, dated August 27, 2019, as amended by the First Amendment thereto dated March 27, 2020 and as further amended by the Second Amendment thereto dated October 1, 2021 (as amended, restated, supplemented or otherwise modified, from time to time, the "**Agreement**"), among **METACRINE, INC.**, a Delaware corporation ("**Borrower Representative**"), and each other Person party thereto as a borrower from time to time (collectively, "**Borrowers**", and each, a "**Borrower**"), **K2 HEALTHVENTURES LLC** and any other lender from time to time party thereto (collectively, "**Lenders**", and each, a "**Lender**"), **K2 HEALTHVENTURES LLC**, as administrative agent for Lenders (in such capacity, and together with its successors, "**Administrative Agent**"), and **ANKURA TRUST COMPANY, LLC**, as collateral agent for Lenders (in such capacity, together with its successors, "**Collateral Trustee**"). Capitalized terms have meanings as defined in the Agreement.

Borrower Representative hereby requests a Loan in the amount of $[●] on [●] (the "**Funding Date**") pursuant to the Agreement, and authorizes Lenders to:

(a) Wire Funds to:

Bank:
Address:

ABA Number:
Account Number:
Account Holder:

(b) Deduct amounts from the foregoing advance to be applied to Lender Expenses and outstanding fees then due as set forth on the attached Schedule 1.

Borrower Representative represents that each of the conditions precedent to the Loans set forth in the Agreement are satisfied and shall be satisfied on the Funding Date, including but not limited to: (i) the representations and warranties set forth in the Agreement and in the other Loan Documents are and shall be true and correct in all material respects on and as of the Funding Date with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date (in which case they remain true and correct in all material respects as of such earlier date); provided, however, that such materiality qualifiers shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof, (ii) no Default or Event of Default has occurred, and (iii) no event that has had or would reasonably be expected to have a Material Adverse Effect has occurred and is continuing. Evidence of the [●] Tranche Milestone is attached hereto as Schedule 1.

Borrower Representative agrees to notify Lenders promptly before the Funding Date if any of the matters which have been represented above shall not be true and correct in all material respects on the Funding Date and if Lenders have received no such notice before the Funding Date then the statements set forth above shall be deemed to have been made and shall be deemed to be true and correct in all material respects as of the Funding Date.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

This Loan Request is hereby executed as of the date first written above.

BORROWER REPRESENTATIVE:

METACRINE, INC.

By:
Name:
Title:

SCHEDULE 1
Evidence of [●]Tranche Milestone

EXHIBIT D

COMPLIANCE CERTIFICATE

TO:K2 HEALTHVENTURES LLC, as Administrative Agent Date: [●]
FROM: [●]

Reference is made to that certain Loan and Security Agreement, dated August 27, 2019, as amended by the First Amendment thereto dated March 27, 2020 and as further amended by the Second Amendment thereto dated October 1, 2021 (as amended, restated, supplemented or otherwise modified, from time to time, the "**Agreement**"), **METACRINE, INC.**, a Delaware corporation ("**Borrower Representative**"), and each other Person party thereto as a borrower from time to time (collectively, "**Borrowers**", and each, a "**Borrower**"), **K2 HEALTHVENTURES LLC** and any other lender from time to time party thereto (collectively, "**Lenders**", and each, a "**Lender**"), **K2 HEALTHVENTURES LLC**, as administrative agent for Lenders (in such capacity, and together with its successors, "**Administrative Agent**"), and **ANKURA TRUST COMPANY, LLC**, as collateral agent for Lenders (in such capacity, together with its successors, "**Collateral Trustee**"). Capitalized terms have meanings as defined in the Agreement.

The undersigned authorized officer of Borrower Representative, solely in his or her capacity as an officer of Borrower Representative, and not in an individual capacity, hereby certifies in accordance with the terms of the Agreement as follows:

(1) Each Borrower is in compliance for the period ending [●] with all covenants set forth in the Agreement; (2) no Event of Default has occurred and is continuing; and (3) the representations and warranties in the Agreement are true and correct in all material respects on this date; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date.

The undersigned certifies that all financial statements delivered herewith are prepared in accordance with GAAP (other than, with respect to unaudited financials for the absence of footnotes and being subject to normal year-end adjustments), consistently applied from one period to the next. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

Please indicate compliance status by circling Yes/No under "Complies" column.

Reporting Covenants	**Required**	**Complies**
Monthly financial statements	Monthly, within 30 days	Yes No
Compliance Certificate	Monthly, within 30 days	Yes No
A/R and A/P Aging Reports	Monthly, within 30 days	Yes No
Annual Operating Budget and Financial Projections	Annually, upon the earlier of (x) 60 days of fiscal year end and (y) 5 Business Days after Board's approval of projections	Yes No
Annual audited financial statements and any management letters	Annually, within 150 days of fiscal year end	Yes No
Statements, reports and notices to stockholders	Within 5 Business Days of delivery	Yes No
SEC filings	Within 5 days after filing with SEC (or by link to website)	Yes No
Legal action notices and updates	Promptly	Yes No
Board materials	As and when delivered to Board	Yes No
Board minutes	Promptly after Board meetings	Yes No
IP report	Quarterly, within 30 days	Yes No
Bank account statements (with transaction detail)	Together with monthly financial statements, or within 3 Business Days of a request by a Loan Party	Yes No

Product related material correspondence, reports, documents and other filings	Within 5 Business Days	Yes No

Other Covenants	**Required**	**Actual**	**Complies**
Equipment financing Indebtedness	Not to exceed $500,000 outstanding	**$**	Yes No
Unsecured credit card Indebtedness	Not to exceed $250,000 outstanding at any time	**$**	Yes No
Repurchases of stock from former employees, consultants, officers and directors	Not to exceed $250,000 per fiscal year	**$**	Yes No
Investments in Subsidiaries that are not Loan Parties	Not to exceed $100,000 per fiscal year	**$**	Yes No
Deposits or pledges for bids, tenders, contracts, leases, surety or appeal bonds	Not to exceed $250,000 at any time	**$**	Yes No
Reimbursement obligations under letters of credit	Not to exceed $100,000 at any time	**$**	Yes No
Investments consisting of employee loans	Not to exceed $250,000 at any time	**$**	Yes No
Other Indebtedness	Not to exceed $250,000 in the aggregate	**$**	Yes No

Other Matters

Please list any SEC filings made since the most recently delivered Compliance Certificate:

Has any Borrower changed its legal name, jurisdiction of organization or chief executive office? If yes, please complete details below: Yes No

_____

Has there been any change of chief executive officer? If so, please describe appointment of any interim replacement (required within 30 days) or full-time replacement by a candidate with equivalent qualifications: Yes No

_____

Have any new Subsidiaries been formed? If yes, please provide complete schedule below. Yes No

Legal Name of SubsidiaryJurisdiction of OrganizationHolder of Subsidiary Equity InterestsEquity Interests Certificated? (Y/N)Jurisdiction

Have any new Deposit Accounts or Securities Accounts been opened? If yes, please complete schedule below. Yes No

AccountholderDeposit Account / IntermediaryAddressAccount NumberAccount Control Agreement in place? (Y/N)

Is there any new Product not previously disclosed on the Perfection Certificate or any prior Compliance Certificate? If yes, please complete details below: Yes No

_____

Has any Loan Party added any new lease location, bailee location or other location where Collateral is maintained? If yes, please describe below: Yes No

_____

Has any Loan Party entered into a Restricted License? If yes, please describe below: Yes No

_____

Do Accounts owing from Medicare or other similar programs of any Governmental Authority exceed $100,000 Yes No

The following are the exceptions with respect to the certification above: (If no exceptions exist, state “No exceptions to note.”)

BORROWER REPRESENTATIVE:

METACRINE, INC.

By:
Name:
Title:

EXHIBIT E

REQUIREMENTS FOR INSURANCE DOCUMENTATION

Contact Information for Insurance Documentation:

Ankura Trust Company, LLC, as Collateral Agent
140 Sherman Street, Fourth Floor
Fairfield, CT 06824

Document Requirements:

DOCUMENT	REQUIREMENT
1.Certificate of Liability Insurance (ACORD FORM 25)	•Ankura Trust Company, LLC and its successors and assigns, as collateral agent, to be designated as **"Additional Insured"**. •Ankura Trust Company, LLC name and address to be listed as Certificate Holder.
2.General Liability Endorsement (Additional Insured Endorsement)	•Ankura Trust Company, LLC and its successors and assigns, as collateral agent, to be named in additional insured endorsement.
3.Evidence of Commercial Property Insurance (ACORD FORM 28)	•All-risk commercial property insurance incurring all of each Borrower's property •Ankura Trust Company, LLC and its successors and assigns, as collateral agent, to be designated as **"Lender's Loss Payable**,**"** with **Lender's Loss Payable** provision designated. •Ankura Trust Company, LLC name and address to be designated in Name and Address of Additional Interest. •Insured locations to include all locations of Borrowers listed in the Perfection Certificate
4.Commercial Property Endorsement (Lender's Loss Payable Endorsement)	•Ankura Trust Company, LLC, and its successors and assigns, as collateral agent, to be scheduled and designated as "Lender Loss Payable" by endorsement •Lender loss payable clause with stipulation that coverage will not be cancelled without a minimum of 10 days' prior written notice for non-payment of premium, or 30 days for any other cancellation.

AUTOMATIC PAYMENT AUTHORIZATION

Effective as of August 27, 2019, METACRINE, INC., a Delaware corporation ("**Borrower Representative**"), hereby authorizes K2 HEALTHVENTURES LLC ("**K2**"), or any affiliate acting on its behalf pursuant to the Loan Agreement and the bank or financial institution named below ("**Bank**"), to automatically debit through the Automatic Clearing House (ACH) from, and initiate variable debit and/or credit entries to, the deposit, checking or savings accounts as designated below maintained in the name of a Borrower, and to cause electronic funds transfers to an account of K2 to be applied to the payment of any and all amounts due under the Loan and Security Agreement, dated August 27, 2019, as amended by the First Amendment thereto dated March 27, 2020 and as further amended by the Second Amendment thereto dated October 1, 2021 (as amended, restated, supplemented or otherwise modified, from time to time, the "**Agreement**"), among Borrower Representative and each Person party thereto as a borrower from time to time (collectively, "**Borrowers**", and each, a "**Borrower**"), K2, and any other lender from time to time party thereto (collectively, "**Lenders**"), and Collateral Trustee, as collateral agent for Lenders, including without limitation, principal, interest, fees, expenses and charges (including Lender Expenses). Capitalized terms not otherwise defined herein, have the meanings given in the Agreement.

This Authorization shall remain in effect until the Loan Agreement has been terminated.

Bank:
Address:

ABA Number:
Account Number:
Account Holder:

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

[SIGNATURE PAGE TO AUTOMATIC PAYMENT AUTHORIZATION]

This Authorization is executed as of the date set forth above by the undersigned authorized representative of Borrower Representative:

METACRINE, INC.

By:
Name:
Title:

EXHIBIT G

FORM OF
SECURED PROMISSORY NOTE

$**[●]** **[●], 20[●]**

FOR VALUE RECEIVED, the undersigned, [METACRINE, INC.], and each Person party thereto as a borrower from time to time (collectively, "**Borrowers**", and each, a "**Borrower**"), hereby unconditionally, jointly and severally, promise to pay to [●] (together with its successors and assigns, the "**Holder**") at the times, in the amounts and at the address set forth in the Loan and Security Agreement, dated as of August 27, 2019, as amended by the First Amendment thereto dated March 27, 2020 and as further amended by the Second Amendment thereto dated October 1, 2021 (as amended, restated, supplemented or otherwise modified from time to time, the "**Loan Agreement**"; capitalized terms used herein without definition have the meanings assigned to such terms in the Loan Agreement), among Borrowers, the Holder, any other lender from time to time party thereto (collectively, "**Lenders**"), and ANKURA TRUST COMPANY, LLC, a New Hampshire chartered trust company, as collateral agent for Lenders (in such capacity, "**Collateral Trustee**"), the lesser of (i) the principal amount of **[●]** Dollars ($**[●]**) and (ii) the aggregate outstanding principal amount of Loans made by the Holder to Borrowers according to the terms of Section 2.2 of the Loan Agreement. Borrowers further, jointly and severally, promise to pay interest in accordance with Section 2.3 of the Loan Agreement. In no event shall interest hereunder exceed the maximum rate permitted under applicable law. All payments of principal, interest and any other amounts due shall be made as set forth in Section 2.5 of the Loan Agreement.

The Obligations evidenced by this Secured Promissory Note (as amended, restated, supplemented or otherwise modified from time to time, this "**Note**") are subject to acceleration in accordance with Section 9.1 of the Loan Agreement. Borrower hereby waives presentment, demand, notice of default or dishonor, notice of payment and nonpayment, protest and all other demands and notices in connection with the execution, delivery, acceptance, performance, default or enforcement of this Note.

This Note is secured by a security interest in the Collateral granted to Collateral Trustee, for the ratable benefit of Lenders, pursuant to certain other Loan Documents.

The terms of Section 11 of the Loan Agreement are incorporated herein, *mutatis mutandis*.

For purposes of Sections 1272, 1273 and 1275 of the IRC, this Note is being issued with "original issue discount." Please contact Trisha Millican, Chief Financial Officer, at 3985 Sorrento Valley Blvd., Suite C, San Diego, CA 92121, or by telephone to obtain information regarding the issue price, issue date, amount of original issue discount and yield to maturity.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

[SIGNATURE PAGE TO SECURED PROMISSORY NOTE]

IN WITNESS WHEREOF, Borrowers have caused this Note to be duly executed and delivered on the date set forth above by the duly authorized representative of each Borrower.

[METACRINE, INC.]

By
Name:
Title:

EXHIBIT H

CONVERSION ELECTION NOTICE

Reference is made to that certain Loan and Security Agreement, August 27, 2019, as amended by the First Amendment thereto dated March 27, 2020 and as further amended by the Second Amendment thereto dated October 1, 2021 (as amended, restated, supplemented or otherwise modified, from time to time, the "**Agreement**"), among **METACRINE, INC.**, a Delaware corporation ("**Borrower Representative**"), and each other Person party thereto as a borrower from time to time (collectively, "**Borrowers**", and each, a "**Borrower**"), the lenders from time to time party thereto (collectively, "**Lenders**", and each, a "**Lender**"), **K2 HEALTHVENTURES LLC**, as administrative agent for Lenders (in such capacity, and together with its successors, "**Administrative Agent**"), and **ANKURA TRUST COMPANY, LLC**, as collateral agent for Lenders (in such capacity, together with its successors, "**Collateral Trustee**"). Capitalized terms have meanings as defined in the Agreement.

The undersigned Lender hereby elects to convert $[_____] of the outstanding Loans into Conversion Shares.

The undersigned Lender hereby certifies that the Person (or Persons) receiving shares of Common Stock upon conversion is not and would not, as a result of such conversion, become the beneficial owner of a number of shares of Common Stock in excess of the limits then applicable under Section 2.2(e)(vi)(1) of the Agreement.

Please issue the Conversion Shares in the following name and to the following address:
Issue to: [_____]
[_____]
[_____]

[LENDER]

By:
Title:
Dated:

DTC Participant Number and Name (if electronic book entry transfer):
Account Number (if electronic book entry transfer):

SCHEDULE 1

COMMITMENTS

	REFINANCING FIRST TRANCHE TERM LOAN COMMITMENT	REFINANCING SECOND TRANCHE-A TERM LOAN COMMITMENT	REFINANCING SECOND TRANCHE-B TERM LOAN COMMITMENT	REFINANCING THIRD TRANCHE TERM LOAN COMMITMENT	REFINANCING FOURTH TRANCHE TERM LOAN COMMITMENT*	TOTAL COMMITMENTS
NTURES	$15,000,000	$5,000,000	$5,000,000	$10,000,000	$10,000,000	$45,000,000

* Availability subject to (a) each Lender's satisfactory review of Borrower Representative's clinical, financial and operating plan and (b) approval of the requested Loan by each Lender (in its sole discretion).

SCHEDULE 2

POST-CLOSING DELIVERIES

1. Within 30 days of the Closing Date, evidence showing the issuance of lender loss payable provisions and endorsements, additional insured clauses and endorsements in favor of Collateral Trustee, in accordance with Section 6.5 hereof.

2. Within 30 days of the Closing Date, duly executed signatures to the Collateral Access Agreement(s) for such locations as Administrative Agent may require

3. Within three Business Days of the Closing Date, the original signature page to the Warrant and any pledged stock certificates or stock powers.

4. Within five Business Days of the Closing Date, duly executed Account Control Agreements (in such final form as is reasonably acceptable to Administrative Agent and Collateral Trustee) for each of the Collateral Accounts identified in the Perfection Certificate as of the Closing Date

Exhibit 31.1

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

I, Preston Klassen, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarter ended September 30, 2021 of Metacrine, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer 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)) 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) 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

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

Date: November 12, 2021

By: /s/ Preston Klassen
Preston Klassen, M.D.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

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

I, Patricia Millican, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the quarter ended September 30, 2021 of Metacrine, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer 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)) 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) 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

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

Date: November 12, 2021

By: /s/ Patricia Millican
Patricia Millican
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

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

In connection with the Quarterly Report of Metacrine, Inc. (the "Company") on Form 10-Q for the quarter ended September 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

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

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

Date: November 12, 2021

By: /s/ Preston Klassen
Preston Klassen, M.D.
President and Chief Executive Officer
(Principal Executive Officer)

Date: November 12, 2021

By: /s/ Patricia Millican
Patricia Millican
Chief Financial Officer
(Principal Financial and Accounting Officer)