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

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2020

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: 001-35867

CHIMERIX, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**33-0903395**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
2505 Meridian Parkway, Suite 100 **Durham, North Carolina**	**27713**
(Address of Principal Executive Offices)	(Zip Code)

(919) 806-1074
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	CMRX	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 x 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 x No o

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 o	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. o

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

As of July 31, 2020, the number of outstanding shares of the registrant’s common stock, par value $0.001 per share, was 62,187,734.

CHIMERIX, INC.

FORM 10-Q FOR THE QUARTER ENDED JUNE 30, 2020

INDEX

PART I - FINANCIAL INFORMATION

ITEM 1. CONSOLIDATED FINANCIAL STATEMENTS

CHIMERIX, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)
(unaudited)

	June 30, 2020	December 31, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 53,501	$ 16,901
Short-term investments, available-for-sale	42,449	96,574
Accounts receivable	367	1,233
Prepaid expenses and other current assets	2,578	3,385
Total current assets	98,895	118,093
Property and equipment, net of accumulated depreciation	338	540
Operating lease right-of-use assets	2,414	709
Other long-term assets	26	34
Total assets	$ 101,673	$ 119,376
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,425	$ 2,398
Accrued liabilities	4,811	6,830
Total current liabilities	6,236	9,228
Lease-related obligations	2,302	196
Total liabilities	8,538	9,424
Stockholders’ equity:		
Preferred stock, $0.001 par value, 10,000,000 shares authorized at June 30, 2020 and December 31, 2019; no shares issued and outstanding as of June 30, 2020 and December 31, 2019	—	—
Common stock, $0.001 par value, 200,000,000 shares authorized at June 30, 2020 and December 31, 2019; 62,172,418 and 61,590,013 shares issued and outstanding as of June 30, 2020 and December 31, 2019, respectively	62	62
Additional paid-in capital	782,217	778,693
Accumulated other comprehensive gain, net	130	35
Accumulated deficit	(689,274)	(668,838)
Total stockholders’ equity	93,135	109,952
Total liabilities and stockholders’ equity	$ 101,673	$ 119,376

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

CHIMERIX, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(in thousands, except share and per share data)
(unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
Revenues:				
Contract revenue	$ 1,396	$ 1,438	$ 2,567	$ 3,794
Licensing revenue	6	—	76	—
Total revenues	1,402	1,438	2,643	3,794
Operating expenses:				
Research and development	8,578	13,827	17,527	27,342
General and administrative	3,110	6,312	6,315	13,998
Total operating expenses	11,688	20,139	23,842	41,340
Loss from operations	(10,286)	(18,701)	(21,199)	(37,546)
Other income:				
Interest income and other, net	270	1,051	763	2,203
Net loss	(10,016)	(17,650)	(20,436)	(35,343)
Other comprehensive loss:				
Unrealized gain on debt investments, net	141	77	95	217
Comprehensive loss	$ (9,875)	$ (17,573)	$ (20,341)	$ (35,126)
Per share information:				
Net loss, basic and diluted	$ (0.16)	$ (0.35)	$ (0.33)	$ (0.69)
Weighted-average shares outstanding, basic and diluted	62,042,778	51,130,104	61,892,407	51,009,935

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

CHIMERIX, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)
(in thousands)
(unaudited)

	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Gain (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance, December 31, 2019	$ 62	$ 778,693	$ 35	$ (668,838)	$ 109,952
Share-based compensation	—	1,326	—	—	1,326
Employee stock purchase plan purchases	—	229	—	—	229
Comprehensive loss:					
Unrealized loss on investments, net	—	—	(46)	—	(46)
Net loss	—	—	—	(10,420)	(10,420)
Total comprehensive loss					(10,466)
Balance, March 31, 2020	$ 62	$ 780,248	$ (11)	$ (679,258)	$ 101,041
Share-based compensation	—	1,391	—	—	1,391
Exercise of stock options	—	578	—	—	578
Comprehensive loss:					
Unrealized gain on investments, net	—	—	141	—	141
Net loss	—	—	—	(10,016)	(10,016)
Total comprehensive loss					(9,875)
Balance, June 30, 2020	$ 62	$ 782,217	$ 130	$ (689,274)	$ 93,135

	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Gain (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance, December 31, 2018	$ 51	$ 733,907	$ (92)	$ (556,262)	$ 177,604
Share-based compensation	—	4,073	—	—	4,073
Exercise of stock options	—	13	—	—	13
Employee stock purchase plan purchases	—	170	—	—	170
Comprehensive loss:					
Unrealized gain on investments, net	—	—	140	—	140
Net loss	—	—	—	(17,693)	(17,693)
Total comprehensive loss					(17,553)
Balance, March 31, 2019	$ 51	$ 738,163	$ 48	$ (573,955)	$ 164,307
Share-based compensation	—	2,367	—	—	2,367
Exercise of stock options	—	17	—	—	17
Comprehensive loss:					
Unrealized gain on investments, net	—	—	77	—	77
Net loss	—	—	—	(17,650)	(17,650)
Total comprehensive loss					(17,573)
Balance, June 30, 2019	$ 51	$ 740,547	$ 125	$ (591,605)	$ 149,118

CHIMERIX, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Six Months Ended June 30,	
	2020	**2019**
Cash flows from operating activities:		
Net loss	$ (20,436)	$ (35,343)
Adjustments to reconcile net loss to net cash used in operating activities**:**		
Depreciation of property and equipment	216	306
Amortization of discount/premium on investments	(277)	(1,205)
Share-based compensation	2,717	6,440
Unrealized loss on equity investment	—	30
Lease-related amortization	(43)	(36)
Changes in operating assets and liabilities:		
Accounts receivable	866	(444)
Prepaid expenses and other assets	809	399
Accounts payable and accrued liabilities	(2,546)	302
Net cash used in operating activities	(18,694)	(29,551)
Cash flows from investing activities:		
Purchases of property and equipment	(11)	(150)
Purchases of short-term investments	(27,652)	(107,149)
Proceeds from sales of short-term investments	1,498	—
Proceeds from maturities of short-term investments	80,652	77,210
Net cash provided by (used in) investing activities	54,487	(30,089)
Cash flows from financing activities:		
Proceeds from exercise of stock options	578	30
Proceeds from employee stock purchase plan	229	171
Payments of deferred offering costs	—	(23)
Net cash provided by financing activities	807	178
Net increase (decrease) in cash and cash equivalents	36,600	(59,462)
Cash and cash equivalents:		
Beginning of period	16,901	81,106
End of period	$ 53,501	$ 21,644

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

Note 1. The Business and Summary of Significant Accounting Policies

Description of Business

Chimerix, Inc. (the Company) is a development-stage biopharmaceutical company dedicated to accelerating the advancement of innovative medicines that make a meaningful impact in the lives of patients living with cancer and other serious diseases. The Company has two clinical-stage product candidates, dociparstat sodium (DSTAT) and brincidofovir (BCV). Dociparstat sodium is a potential first-in-class glycosaminoglycan compound derived from porcine heparin with known anti-inflammatory properties, but is designed to substantially reduce the risk of bleeding complications compared to commercially available forms of heparin. DSTAT is in development as a potential first-line therapy in acute myeloid leukemia (AML). DSTAT is also being developed as a potential treatment for acute lung injury (ALI) in COVID-19 patients. DSTAT has the potential to inhibit several potentially key molecular drivers of COVID-19 pathology, including HMGB1, PF4 and P-selectin. DSTAT may effectively reduce the excessive inflammation and coagulation seen in COVID-19 via multiple mechanisms while mitigating the risk of severe bleeding events presented by fully anticoagulant forms of heparin. BCV is an investigational lipid conjugate that inhibits a viral DNA polymerase that is in development as a medical countermeasure for smallpox. The Company expects to continue its evaluation of external innovation in order to license, acquire or otherwise gain access to molecules that further broaden its pipeline of investigational agents in cancer or other serious diseases.

Basis of Presentation

The accompanying unaudited consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. The accompanying unaudited consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP) for interim financial information, the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements and should be read in conjunction with the Company’s audited financial statements and notes thereto included in its Annual Report on Form 10-K for the year ended December 31, 2019. In the opinion of the Company’s management, all adjustments, consisting of normal recurring adjustments, necessary for a fair presentation of its financial position, operating results and cash flows for the periods presented have been included. Operating results for the three and six months ended June 30, 2020 are not necessarily indicative of the results that may be expected for the full year, for any other interim period or for any future year.

Reclassifications

Certain prior period amounts in the accompanying consolidated financial statements have been reclassified to conform to the current year presentation. These reclassifications had no effect on previously reported net income or stockholders' equity (deficit).

Fair Value of Financial Instruments

The carrying amounts of certain financial instruments, including accounts receivable, accounts payable and accrued expenses approximate their fair values due to the short-term nature of such instruments.

For assets and liabilities recorded at fair value, it is the Company’s policy to maximize the use of observable inputs and minimize the use of unobservable inputs when developing fair value measurements, in accordance with the fair value hierarchy. Fair value measurements for assets and liabilities where there exists limited or no observable market data are based primarily upon estimates and are often calculated based on the economic and competitive environment, the characteristics of the asset or liability and other factors. Therefore, fair value measurements cannot be determined with precision and may not be realized in an actual sale or immediate settlement of the asset or liability. Additionally, there may be inherent weaknesses in any calculation technique and changes in the underlying assumptions used, including discount rates and estimates of future cash flows, could significantly affect the calculated current or future fair values. The Company utilizes fair value measurements to record fair value adjustments to certain assets and liabilities and to determine fair value disclosures.

The Company groups assets and liabilities at fair value in three levels, based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value. The determination of where an asset or liability falls in the hierarchy requires significant judgment. These levels are:

- *Level 1* — Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access.
- *Level 2* — Valuations based on quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and models for which all significant inputs are observable, either directly or indirectly.
- *Level 3* — Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

At June 30, 2020 and December 31, 2019, the Company had cash equivalents including money market funds, whose value is based on quoted market prices. At June 30, 2020 and December 31, 2019, the Company had short term investments, including U.S. Treasury securities, whose value is based on quoted market prices. Accordingly, these securities are classified as Level 1.

At June 30, 2020 and December 31, 2019, the Company had short-term investments, including commercial paper and corporate bonds. As quoted prices are not available for these securities, they are valued using independent pricing models or other model-based valuation techniques such as the present value of future cash flows, adjusted for the security’s credit rating, prepayment assumptions and other factors such as credit loss assumptions. Accordingly, these securities are classified as Level 2.

There was no material re-measurement to fair value of financial assets and liabilities that are not measured at fair value on a recurring basis. For additional information regarding the Company's investments, please refer to Note 2, "Investments."

Below are tables that present information about certain assets measured at fair value on a recurring basis (in thousands):

	Fair Value Measurements June 30, 2020			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents				
Money market funds	$ 48,938	$ 48,938	$ —	$ —
Total cash equivalents	48,938	48,938	—	—
Short-term investments				
U.S. treasury securities	6,021	6,021	—	—
Commercial paper	18,594	—	18,594	—
Corporate bonds	17,834	—	17,834	—
Total short-term investments	42,449	6,021	36,428	—
Total assets	$ 91,387	$ 54,959	$ 36,428	$ —

	Fair Value Measurements December 31, 2019			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents				
Money market funds	$ 11,854	$ 11,854	$ —	$ —
Total cash equivalents	11,854	11,854	—	—
Short-term investments				
U.S. treasury securities	22,493	22,493	—	—
Commercial paper	43,119	—	43,119	—
Corporate bonds	30,962	—	30,962	—
Total short-term investments	96,574	22,493	74,081	—
Total assets	$ 108,428	$ 34,347	$ 74,081	$ —

Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	June 30, 2020	December 31, 2019
Accrued research and development expenses	$ 1,736	$ 1,868
Accrued compensation	2,271	3,626
Other accrued liabilities	804	1,336
Total accrued liabilities	$ 4,811	$ 6,830

Revenue Recognition

Policy

The Company’s revenues generally consist of (i) contract revenue - revenue generated under federal contracts, and (ii) collaboration and licensing revenue - revenue related to non-refundable upfront fees, royalties and milestone payments earned under license agreements. Revenue is recognized in accordance with the criteria outlined in Accounting Standards Codification (ASC) 606 issued by the Financial Accounting Standards Board (FASB). Following this accounting pronouncement, a five-step approach is applied for recognizing revenue, including (1) identify the contract with a customer; (2) identify the performance

obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in the contract; and (5) recognize revenue when, or as, the entity satisfies a performance obligation.

Biomedical Advanced Research and Development Authority (BARDA)

In February 2011, the Company entered into a contract with BARDA for the advanced development of BCV as a medical countermeasure in the event of a smallpox release. Under the contract, the Company may receive up to $75.8 million in expense reimbursement and $5.3 million in fees over the performance of 1 base segment and 4 option segments. Exercise of each option segment is solely at the discretion of BARDA. The Company assessed the services in accordance with the authoritative guidance and concluded that there is a potential of 5 separate contracts (1 base segment and 4 option segments) within this agreement, each of which has a single performance obligation. At present, all options segments (1 through 4) have been exercised, as well as the base segment. The transaction price for each segment, based on the transaction price as defined in each segment contract, is allocated to the single performance obligation for each contract. The transaction price is recognized over time by measuring the progress toward complete satisfaction of the performance obligation. For reimbursable expenses, this occurs as qualifying research activities are conducted based on invoices from company vendors. For the fixed fee, the progress toward complete satisfaction is estimated based on the costs incurred to date relative to the total estimated costs per the terms of each contract. The Company typically invoices BARDA monthly as costs are incurred. Any amounts received in advance of performance are recorded as deferred revenue until earned. The base segment and first option segment were completed prior to adoption of ASC 606. The Company is currently performing under the second, third and fourth option segments of the contract during which the Company may receive up to a total of $23.9 million, $14.1 million and $4.6 million in expense reimbursement and fees, respectively. The second and third option segments are scheduled to end on August 20, 2020. The fourth option segment is scheduled to end on February 15, 2021.

SymBio Pharmaceuticals

On September 30, 2019, the Company entered into a license agreement with SymBio Pharmaceuticals Limited (SymBio) under which the Company granted SymBio exclusive worldwide rights to develop, manufacture and commercialize BCV for all human indications, excluding the prevention and treatment of orthopoxviruses, including smallpox. The Company assessed the agreement in accordance with the authoritative guidance and concluded that the SymBio contract includes multiple performance obligations. The SymBio contract has one fixed transaction amount of a $5.0 million upfront payment received in October 2019 and several variable transaction amounts, up to $180 million, due to the Company at certain regulatory and commercial milestones, along with low double-digit percent royalties based on net sales of BCV. All variable transaction amounts are fully constrained, therefore the allocated transaction price is $5.0 million. The majority of the transaction price of the contract has been allocated to the combined performance obligation of the granting of the license to BCV and associated technology transfer which was recognized when the technology transfer was completed in the fourth quarter of 2019. The revenue from regulatory and commercial milestones and royalties from net sales will be recognized upon the occurrence of the triggering events or when those transaction amounts are no longer fully constrained.

Research and Development Prepaids and Accruals

As part of the process of preparing financial statements, the Company is required to estimate its expenses resulting from its obligation under contracts with vendors and consultants and clinical site agreements in connection with its research and development efforts. The financial terms of these contracts are subject to negotiations which vary contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to the Company under such contracts.

The Company’s objective is to reflect the appropriate research and development expenses in its financial statements by matching those expenses with the period in which services and efforts are expended. The Company accounts for these expenses according to the progress of its research and development efforts. The Company determines prepaid and accrual estimates through discussion with applicable personnel and outside service providers as to the progress or state of communication of clinical trials, or other services completed. The Company adjusts its rate of research and development expense recognition if actual results differ from its estimates. The Company makes estimates of its prepaid and accrued expenses as of each balance sheet date in its financial statements based on facts and circumstances known at that time. Although the Company does not expect its estimates to be materially different from amounts actually incurred, its understanding of status and timing of services performed relative to the actual status and timing of services performed may vary and may result in the Company reporting amounts that are too high or too low for any particular period. Through June 30, 2020, there had been no material adjustments to the Company’s prior period estimates of prepaid and accruals for research and development expenses. The Company’s research and development prepaids and accruals are dependent upon the timely and accurate reporting of contract research organizations and other third-party vendors.

Basic and Diluted Net Loss Per Share of Common Stock

Basic net loss per share of common stock is computed by dividing net loss by the weighted-average number of shares of common stock outstanding during the period, excluding the dilutive effects of non-vested restricted stock, stock options, and employee stock purchase plan purchase rights. Diluted net loss per share of common stock is computed by dividing net loss by the sum of the weighted-average number of shares of common stock outstanding during the period plus the potential dilutive effects of non-vested restricted stock, stock options, and employee stock purchase plan purchase rights outstanding during the period calculated in accordance with the treasury stock method, but are excluded if their effect is anti-dilutive. Because the impact of these items is anti-dilutive during the periods of net loss, there was no difference between basic and diluted loss per share of common stock for the three and six months ended June 30, 2020 and 2019.

Impact of Recently Issued Accounting Standards

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which amends the impairment model by requiring entities to use a forward-looking approach on expected losses to estimate credit losses on certain financial instruments, including trade receivables and available-for-sale debt securities. The new guidance was originally due to become effective for the Company beginning in the first quarter of 2020, however the FASB in November 2019 issued ASU 2019-10 which moved the effective date for smaller reporting companies to the first quarter of 2023. The Company is currently evaluating the potential impact that this standard may have on its consolidated financial statements.

Note 2. Investments

The following tables summarize the Company's debt investments (in thousands):

	June 30, 2020			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Corporate bonds	$ 17,767	$ 66	$ —	$ 17,833
U.S. treasury securities	5,999	23	—	6,022
Commercial paper	18,553	41	—	18,594
Total investments	$ 42,319	$ 130	$ —	$ 42,449

	December 31, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Corporate bonds	$ 30,952	$ 19	$ (9)	$ 30,962
Commercial paper	43,109	14	(4)	43,119
U.S. treasury securities	22,478	17	(2)	22,493
Total investments	$ 96,539	$ 50	$ (15)	$ 96,574

The following tables summarize the Company's debt investments with unrealized losses, aggregated by investment type and the length of time that individual investments have been in a continuous unrealized loss position (in thousands, except number of securities):

At June 30, 2020 there were no debt investments with unrealized losses.

	December 31, 2019					
	Less than 12 Months		Greater than 12 Months		Total	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Corporate bonds	$ 9,657	$ (9)	$ —	$ —	$ 9,657	$ (9)
Commercial paper	10,147	(4)	—	—	10,147	(4)
U.S. treasury securities	2,994	(2)	—	—	2,994	(2)
Total	$ 22,798	$ (15)	$ —	$ —	$ 22,798	$ (15)
Number of securities with unrealized losses		9		—		9

The Company periodically reviews available-for-sale debt investments for other-than-temporary declines in fair value below the cost basis and whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company evaluates, among other things, the duration and extent to which the fair value of a security is less than its cost; the financial condition of the issuer and any changes thereto; and the Company’s intent to sell, or whether it will more likely than not be required to sell, the security before recovery of its cost basis. At June 30, 2020, the Company had no available-for-sale debt investments in an unrealized loss position. There were no such declines in value for the three and six months ended June 30, 2020 and 2019. Unrealized gains and losses on debt investments are recorded to unrealized (loss) gain on debt investments, net in the Consolidated Statements of Operations and Comprehensive Loss. The Company recognizes interest income on an accrual basis in interest income in the Consolidated Statements of Operations and Comprehensive Loss.

The following table summarizes the scheduled maturity for the Company's debt investments at June 30, 2020 (in thousands):

Maturing in one year or less	$ 42,449
Maturing after one year through two years	—
Total debt investments	$ 42,449

Note 3. Commitments and Contingencies

Leases

The Company leases its facilities under long-term operating leases that expire at various dates through 2026. The Company generally has options to renew lease terms on its facilities, which may be exercised at the Company's sole discretion. In addition, certain lease arrangements may be terminated prior to their original expiration date at the Company's discretion. The Company evaluates renewal and termination options at the lease commencement date to determine if it is reasonably certain to exercise the option and has concluded on all operating leases that it is not reasonably certain that any options will be exercised. The weighted-average remaining lease term for the Company's operating leases as of June 30, 2020 was 5.67 years.

Expense related to leases is recorded on a straight-line basis over the lease term. Lease expense under operating leases, including common area maintenance fees, totaled approximately $173,000 and $182,000, respectively, for the three months ended June 30, 2020 and 2019, and $366,000 and $376,000 for the six months ended June 30, 2020 and 2019, respectively.

The discount rate implicit within the Company's leases is generally not determinable and therefore the Company determines the discount rate based on its incremental borrowing rate based on the information available at commencement date. As of June 30, 2020, the operating lease liabilities reflect a weighted-average discount rate of 8.28%.

The following table sets forth the operating lease right-of-use assets and liabilities as of June 30, 2020 (in thousands):

Assets		
Operating lease right-of-use assets	$	2,414
Liabilities		
Operating lease short-term liabilities (recorded within Accrued liabilities)	$	189
Operating lease long-term liabilities (recorded within Lease-related obligations)		2,302
Total operating lease liabilities	$	2,491

Operating lease payments over the remainder of the lease terms are as follows (in thousands):

Years Ending December 31,		**As of June 30, 2020**
2020	$	362
2021 (1)		191
2022		546
2023		562
2024		580
All remaining years		955
Total future minimum rental payments	$	3,196
Less amount of lease payments representing interest		705
Total present value of lease payments	$	2,491

(1) The Company entered into the Ninth Amendment of its lease for the Company's headquarters in Durham, NC, which extended the term of the lease 65 months to July 31, 2026. As part of the amendment, the Company will receive a rent abatement of the first 5 months of the new lease term which begins on March 1, 2021. Additionally, the Ninth Amendment grants the Company a refurbishment allowance, which the Company expects to receive in 2021 after the refurbishment has been completed.

As of December 31, 2019, operating lease payments over the remainder of the lease terms were as follows (in thousands):

Years Ending December 31,		**As of December 31, 2019**
2020	$	719
2021		182
Total future minimum rental payments	$	901
Less amount of lease payments representing interest		66
Total present value of lease payments	$	835

For the three months ended June 30, 2020 and 2019, the Company made lease payments of approximately $180,000 and $194,000, respectively, and for the six months ended June 30, 2020 and 2019, the Company made lease payments of approximately $357,000 and $386,000, respectively, which are included in operating cash flows.

Sublease

The Company subleases 3,537 square feet of its office space under a non-cancelable operating lease that expires in February 2021. For the three and six months ended June 30, 2020 and 2019, the Company recognized approximately $18,000 and $35,000 of income in Interest income and other, net on the Consolidated Statement of Operations and Comprehensive Loss. Total future minimum rentals under the non-cancelable operating sublease are presented below (in thousands):

Years Ending December 31,		**As of June 30, 2020**
2020	$	41
2021		14
Total future minimum sublease rentals	$	55

Significance of Revenue Source

The Company is the recipient of federal research contract funds from BARDA, the sole source of the Company's contract revenue. Periodic audits are required under the Company's BARDA agreement and certain costs may be questioned as appropriate under the BARDA agreement. Management believes that such amounts in the current year, if any, are not significant. Accordingly, no provision for refundable amounts under the BARDA agreement had been made as of June 30, 2020 and December 31, 2019.

Note 4. Equity Transactions and Share-based Compensation

Stock Options

The Company maintains a 2013 Equity Incentive Plan (the 2013 Plan), which provides for the grant of incentive stock options (ISOs), non-statutory stock options (NSOs), stock appreciation rights, restricted stock awards, restricted stock unit (RSU) awards, performance-based stock awards, and other forms of equity compensation (collectively, stock awards), all of which may be granted to employees, including officers, non-employee directors and consultants of the Company and its affiliates. Additionally, the 2013 Plan provides for the grant of performance cash awards. The number of shares of common stock reserved for future issuance automatically increases on January 1 of each calendar year by 4% of the total number of shares of capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by the Company's board of directors. On January 1, 2020, the common stock reserved for issuance under the 2013 Plan was automatically increased by 2.5 million shares. As of June 30, 2020, there was a total of 2.9 million shares reserved for future issuance under the 2013 Plan. The Company issued 242,000 shares of common stock pursuant to the exercise of stock options during each of the three and six months ended June 30, 2020. The Company issued approximately 6,000 and 14,000 shares of common stock pursuant to the exercise of stock options during the three and six months ended June 30, 2019, respectively.

Employee Stock Purchase Plan

The Company maintains a 2013 Employee Stock Purchase Plan (ESPP), which provides for the issuance of shares of common stock pursuant to purchase rights granted to the Company's employees or to employees of any of its designated affiliates. The Company has reserved a total of 3.5 million shares of common stock to be purchased under the ESPP, of which 2.6 million shares remained available for purchase as of June 30, 2020. The number of shares of common stock reserved for issuance automatically increases on January 1 of each calendar year, by the lesser of (a) 1% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, (b) 422,535 shares, or (c) a number determined by the Company's board of directors that is less than (a) and (b). On January 1, 2020, the common stock reserved for issuance under the ESPP was automatically increased by an additional 422,535 shares.

The ESPP provides for an automatic reset feature to start participants on a new twenty-four month participation period in the event that the common stock market value on a purchase date is less than the common stock value on the first day of the twenty-four month offering period. Eligible employees may authorize an amount up to 15% of their salary to purchase common stock at the lower of a 15% discount to the beginning price of their offering period or a 15% discount to the ending price of each six-month purchase interval. The Company issued approximately 177,000 and 113,000 shares of common stock pursuant to the ESPP during the six months ended June 30, 2020 and 2019, respectively. Compensation expense for shares purchased under the ESPP related to the purchase discount and the "look-back" option and were determined using a Black-Scholes option pricing model.

Restricted Stock Units

The Company has issued RSUs to certain employees which vest based on service criteria. When vested, the RSU represents the right to be issued the number of shares of the Company's common stock that is equal to the number of RSUs granted. The grant date fair value for RSUs is based upon the market price of the Company's common stock on the date of the grant. The fair value is then amortized to compensation expense over the requisite service period or vesting term. The Company issued no shares and approximately 163,000 shares of common stock pursuant to the vesting of RSUs during each of the three and six months ended June 30, 2020. The Company issued approximately 201,000 and 369,000 shares of common stock pursuant to the vesting of RSUs during the three and six months ended June 30, 2019, respectively.

Stock-based Compensation

For awards with only service conditions and graded-vesting features, the Company recognizes compensation expense on a straight-line basis over the requisite service period. Total share-based compensation expense recognized related to stock options, the ESPP and RSUs was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Research and development expense	$ 725	$ 1,000	$ 1,465	$ 2,270
General and administrative expense	666	1,367	1,252	4,170
Total share-based compensation expense	$ 1,391	$ 2,367	$ 2,717	$ 6,440

Compensation expense for the six months ended June 30, 2019 includes $1.8 million of share-based compensation expense related to the accelerated vesting and modification of stock options and RSUs of the Company's then President and CEO in connection with her severance agreement.

Related to the Company's reduction in workforce that occurred in May 2019, compensation expense for the three and six months ended June 30, 2019 includes $0.7 million of share-based compensation expense related to the accelerated vesting and modifications of stock options and RSUs.

Note 5. Income Taxes

The Company estimates an annual effective tax rate of 0% for the year ending December 31, 2020 as the Company incurred losses for the six month period ended June 30, 2020, and is forecasting an estimated net loss for both financial statement and tax purposes for the year ending December 31, 2020. Therefore, no federal or state income taxes are expected and none have been recorded at this time. Income taxes have been accounted for using the liability method in accordance with FASB ASC 740.

Due to the Company's history of losses since inception, there is not enough evidence at this time to support that the Company will generate future income of a sufficient amount and nature to utilize the benefits of its net deferred tax assets. Accordingly, the deferred tax assets have been reduced by a full valuation allowance, since the Company cannot currently support that realization of its deferred tax assets is more likely than not. However, the Company feels its deferred tax assets may be used upon the Company becoming profitable.

At June 30, 2020, the Company had no unrecognized tax benefits that would reduce the Company’s effective tax rate if recognized.

Note 6. Significant Agreements

Biomedical Advanced Research and Development Authority (BARDA)

In February 2011, the Company entered into a contract with BARDA for the advanced development of BCV as a medical countermeasure in the event of a smallpox release. Under the contract, BARDA will reimburse the Company, plus pay a fixed fee, for the research and development of BCV as a broad-spectrum therapeutic antiviral for the treatment of smallpox infections. The contract consists of an initial performance period, referred to as the base performance segment, plus up to four extension periods, referred to as option segments, of which all have been exercised. Under the contract as currently in effect, the Company may receive up to $75.8 million in expense reimbursement and $5.3 million in fees.

The Company is currently performing under the second, third and fourth option segments of the contract during which the Company may receive up to a total of $23.9 million, $14.1 million and $4.6 million in expense reimbursement and fees, respectively. The second and third option segments are scheduled to end on August 20, 2020. The fourth option segment is scheduled to end on February 15, 2021. Of the $75.8 million in expense reimbursement and $5.3 million in fees that the Company may receive, approximately $78.9 million in expense reimbursement and fees has been awarded. As of June 30, 2020, of the total funding the Company had invoiced an aggregate of $72.6 million with respect to the base performance segment and the four option segments. For the three months ended June 30, 2020 and 2019, the Company recognized revenue under this contract of $1.4 million and $1.4 million, respectively, and for the six months ended June 30, 2020 and 2019, the Company recognized revenue under this contract of $2.6 million and $3.8 million, respectively.

Cantex Pharmaceuticals, Inc.

On July 26, 2019, the Company entered into a License and Development Agreement with Cantex Pharmaceuticals, Inc. (Cantex) pursuant to which the Company acquired exclusive worldwide rights to develop and commercialize, for any and all uses, a glycosaminoglycan compound known as DSTAT, which is currently being studied for the treatment of acute myeloid leukemia and acute lung injury in patients with COVID-19. Under the terms of the license agreement, the Company will be responsible for, and bear the future costs of, worldwide development and commercialization of DSTAT. In connection with the transaction, Cantex assigned to the Company all of its rights under its DSTAT supply agreements, including its bulk API agreement with Scientific Protein Laboratories LLC (SPL), pursuant to which SPL will exclusively produce DSTAT for the Company through October 2030.

In consideration for the license rights, the Company made an upfront cash payment of $30.0 million to Cantex and issued to Cantex 10.0 million shares of its common stock. During 2019, the Company recognized $65.0 million of acquired in-process research and development expenses for the $30.0 million upfront cash payment, the fair value of the 10.0 million shares of common stock issued to Cantex and $0.1 million of transaction costs. The license agreement obligates the Company to pay Cantex regulatory milestone payments of up to $202.5 million upon receipt of product approvals in the United States, the European Union and Japan, and sales milestone payments of up to $385.0 million upon achievement of specified net sales levels. The Company also agreed to pay Cantex tiered royalties based on percentages of net sales beginning at 10% and not to exceed the high-teens.

SymBio Pharmaceuticals

On September 30, 2019, the Company entered into a license agreement with SymBio under which the Company granted SymBio exclusive worldwide rights to develop, manufacture and commercialize BCV for all human indications, excluding the prevention and treatment of orthopoxviruses, including smallpox. Under the terms of the license agreement, SymBio will be responsible for, and bear the future costs of, worldwide development and commercialization of BCV in the licensed indications. Either party may terminate the license agreement upon the occurrence of a material breach by the other party (subject to standard cure periods). SymBio may also terminate the license agreement without cause on a country-by-country basis upon ninety days' prior notice.

In exchange for the license to SymBio under the Company's BCV rights, the Company received an upfront payment of $5.0 million in October 2019. In addition, the Company is eligible to receive up to $180.0 million in clinical, regulatory and commercial milestones worldwide, as well as low double-digit percent royalties based on net sales of BCV. Since entering into the license agreement in September 2019, the Company has recognized substantially all of the $5.0 million upfront payment.

University of Michigan

In 2006, the Company entered into a license agreement with The Regents of the University of Michigan (UM) under which the Company obtained an exclusive, worldwide license to UM’s patent rights in certain inventions (UM Patent Rights) related to certain compounds originally synthesized at UM. Under the license agreement, the Company is permitted to research, develop, manufacture and commercialize products utilizing the UM Patent Rights, and to sublicense such rights subject to certain sublicensing fees and royalty payments.

In consideration for the rights granted to the Company, under the license agreement as amended in December 2016, the Company paid UM $50,000 in fees in 2016 and in January 2017 issued UM an aggregate of 33,058 shares of its common stock. In connection with the Company's commercialization or sublicensing of certain products covered by the license agreement, including our former product candidate CMX521, the Company could be required to pay royalties on net sales of such products ranging from 0.25% to 2%. Beginning in 2024, the Company is also subject to certain minimum annual royalty payments.

The UM license agreement requires that the Company use commercially reasonable efforts to develop and make commercially available licensed products as soon as practicable. Specifically, the Company has agreed to make the first commercial sale of a licensed product by June of 2026. UM may terminate the license agreement if the Company materially breaches the license agreement. The Company is currently in compliance with its milestone requirements.

Note 7. Restructuring Costs

In May 2019, the Company made the decision to discontinue the development of oral and IV BCV development programs for the treatment of Adenovirus (AdV) in stem-cell transplant (HCT) patients. The Company's development efforts with respect to BCV are now focused on the treatment of smallpox. As a result, the Company restructured its operations, which included a reduction in workforce of 43 full-time employees and the accrual of expenses to close-out the clinical trials for the oral and IV

development programs of BCV in AdV (study 210, study 211, AdAPT) and other supportive BCV development programs. In 2019, the Company recorded charges for one-time employee termination benefits of $3.3 million, contract close-out costs of $2.0 million, other BCV development costs of $0.3 million, and losses on disposals of fixed assets of $0.3 million during 2019. The $2.0 million of contract close-out costs were recorded through an increase in liabilities of $1.5 million with the remainder recognized through the expensing of prepaid balances. As of December 31, 2019, the Company had a clinical trial accrual balance related to the AdAPT, 210 and 211 trial terminations of $27,000, other development costs accrual balance of $0.1 million, and severance accrual balance of $0.2 million. Additionally, as of December 31, 2019 prepaid balances of $1.3 million for unused deposits have been reclassed to other receivables, which was recorded in prepaid expenses and other current assets on the Consolidated Balance Sheet.

The following table summarizes the restructuring charges (in thousands) recorded in 2019 during the period subsequent to the restructuring in May 2019:

	Employee Termination Benefits	Clinical Trial Close-out Costs	Other Development Costs	Fixed Asset Disposals	Total
Research and development	$ 1,437	$ 2,021	$ 339	$ —	$ 3,797
General and administrative	1,909	—	—	—	1.909
Interest income and other, net	—	—	—	250	250
Total restructuring expenses	$ 3,346	$ 2,021	$ 339	$ 250	$ 5,956

For the three and six months ended June 30, 2019, $4.6 million of research and development and $1.9 million of general and administrative restructuring charges were recorded.

The following table sets forth the accrual activity for employee termination benefits and contract close-out costs (in thousands) for 2019.

	Employee Termination Benefits	Clinical Trial Close-out Costs	Other Development Costs	Fixed Asset Disposals	Total
Balance at January 1, 2019	$ —	$ —	$ —	$ —	$ —
Accruals	3,335	2,131	315	—	5,781
Revised estimates	11	(621)	24	250	(336)
Payments	(3,163)	(1,483)	(229)	(250)	(5,125)
Balance at December 31, 2019	$ 183	$ 27	$ 110	$ —	$ 320

The following table sets forth the accrual activity for employee termination benefits and contract close-out costs (in thousands) for the six months ended June 30, 2020. All amounts are expected to be fully paid by the end of the third quarter of 2020 and no additional charges are expected to be incurred.

	Employee Termination Benefits	Clinical Trial Close-out Costs	Other Development Costs	Total
Balance at December 31, 2019	$ 183	$ 27	$ 110	$ 320
Revised estimates	—	(14)	—	(14)
Payments	(114)	(4)	(100)	(218)
Balance at March 31, 2020	$ 69	$ 9	$ 10	$ 88
Revised estimates	—	(5)	—	(5)
Payments	(69)	—	—	(69)
Balance at June 30, 2020	$ —	$ 4	$ 10	$ 14

For the three and six months ended June 30, 2020, the revised accrual estimates resulted in a decrease to research and development expenses of $5,000 and $19,000, respectively. Additionally, during the three months ended June 30, 2020 refunds of unused deposits of $1.3 million were received, which were previously recorded in prepaid expenses and other current assets on the Consolidated Balance Sheet.

Note 8. Subsequent Events

The Company has evaluated subsequent events through the issuance date of these financial statements to ensure that this filing includes appropriate disclosure of events both recognized in the financial statements as of June 30, 2020, and events which occurred subsequently but were not recognized in the financial statements.

On July 30, 2020, the Company entered into the Second Amendment to an industrial building lease to extend the lease period through July 31, 2026.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited consolidated financial statements and related notes included in this Quarterly Report on Form 10-Q and the audited financial statements and notes thereto as of and for the year ended December 31, 2019 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the Securities and Exchange Commission (SEC) on February 25, 2020. Past operating results are not necessarily indicative of results that may occur in future periods.

Forward-Looking Statements

The information in this discussion contains forward-looking statements and information within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are subject to the "safe harbor" created by those sections. These forward-looking statements include, but are not limited to, statements concerning our strategy, future operations, future financial position, future revenues, projected costs, prospects and plans and objectives of management. The words "anticipates," "believes," "estimates," "expects," "intends," "may," "plans," "projects," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make. These forward-looking statements involve risks and uncertainties that could cause our actual results to differ materially from those in the forward-looking statements, including, without limitation, the risks set forth in Part II, Item IA, "Risk Factors" in this Quarterly Report on Form 10-Q and in our other filings with the SEC. The forward-looking statements are applicable only as of the date on which they are made, and we do not assume any obligation to update any forward-looking statements.

OVERVIEW

Chimerix is a development-stage biopharmaceutical company dedicated to accelerating the advancement of innovative medicines that make a meaningful impact in the lives of patients living with cancer and other serious diseases. Our two clinical-stage development programs are dociparstat sodium (DSTAT) and brincidofovir (BCV).

Dociparstat sodium is an investigational glycosaminoglycan derivative of heparin with known anti-inflammatory properties, but is designed to substantially reduce the risk of bleeding complications compared to commercially available forms of heparin. DSTAT is in development as a potential first-line therapy in acute myeloid leukemia (AML).

DSTAT is also being developed as a potential treatment for acute lung injury (ALI) in COVID-19 patients. In preclinical studies DSTAT has been observed to reduce levels of HMGB1, a cytokine which plays a major role in the pathogenesis of immune disorders. Elevated HMGB1 in serum is strongly associated with clinical severity and mortality in COVID-19 patients. We believe that DSTAT has the potential to inhibit several potentially key molecular drivers of COVID-19 pathology, including HMGB1, PF4 and P-selectin. We also believe that DSTAT has the potential to reduce the excessive inflammation and coagulation seen in COVID-19 via multiple mechanisms while mitigating the risk of severe bleeding events presented by fully anticoagulant forms of heparin.

BCV is an investigational lipid conjugate that inhibits a viral DNA polymerase that is in development as a medical countermeasure for smallpox. We expect to continue our evaluation of external innovation in order to license, acquire or otherwise gain access to molecules that further broaden our pipeline of investigational agents in cancer or other serious diseases.

Recent Developments

Dociparstat for the Treatment of Acute Lung Injury (ALI) in COVID-19 Patients

In April, we announced the initiation of a Phase 2/3 study of DSTAT in patients with acute lung injury (ALI) from COVID-19. The study is a 1:1 randomized, double-blind, placebo-controlled, Phase 2/3 trial to evaluate the safety and efficacy of DSTAT in adults with severe COVID-19 who are at high risk of respiratory failure. Eligible subjects will be those with confirmed COVID-19 who require hospitalization and supplemental oxygen therapy. The primary endpoint of the study is the proportion of subjects who survive and do not require mechanical ventilation through day 28. Additional endpoints include time to improvement as assessed by the National Institute of Allergy and Infectious Disease ordinal scale, time to hospital discharge,

time to resolution of fever, number of ventilator-free days, all-cause mortality, and changes in key biomarkers (e.g. IL-6, TNF-α, HMGB1, C-reactive protein and d-dimer).

The Phase 2 portion of the study will enroll 24 subjects to determine the maximum tolerated dose and will then expand by an additional 50 patients (74 total) at the selected dose. A formal analysis of all endpoints, including supportive biomarkers will be performed at the conclusion of the Phase 2 portion of the study. Contingent upon positive results from the Phase 2 portion, the Phase 3 portion of the study will enroll approximately 450 subjects. This study is currently enrolling and we expect to complete Phase 2 enrollment in the fourth quarter of 2020.

Dociparstat for First-Line Acute Myeloid Leukemia (AML)

Earlier this year, we conducted an end of Phase 2 meeting with the FDA related to the Company's development of DSTAT in AML. Following that meeting, we incorporated FDA's feedback on key elements of a proposed Phase 3 clinical trial and we believe have since reached consensus with FDA on the full protocol. Currently we are working to initiate the Phase 3 clinical study of DSTAT for the treatment of AML in early 2021.

We expect that the proposed Phase 3 trial will be a randomized, blinded trial of approximately 570 newly diagnosed AML patients. The trial will include patients 60 years of age and older who have an intermediate or adverse genetic risk profile. It will also include patients between 18 and 60 years old who have an adverse genetic risk profile. Patients will be randomized 1:1 to receive DSTAT in combination with standard cytarabine plus anthracycline (7+3) induction and cytarabine consolidation chemotherapy or will receive standard of care (7+3) induction and consolidation chemotherapy alone. Patients with FLT-3 mutations will be allowed in the study and will be eligible to receive midostaurin.

The primary endpoint of the proposed trial will be overall survival (OS). In addition, the FDA has indicated that event-free survival (EFS) using complete response with hematologic recovery to define induction success (CR) may be acceptable as an endpoint for regulatory approval. Other endpoints to be evaluated in the proposed trial include: minimal residual disease (MRD), relapse-free survival (RFS), time to hematologic recovery, and induction response.

In order to supplement the previously reported data from pilot and Phase 2 studies and provide additional evidence regarding DSTAT's potential mechanism of action, the proposed Phase 3 trial includes an early assessment of comparative CR and MRD rates among the first 80 evaluable patients. The data are expected to be unblinded, reported publicly, and available for ongoing analysis of later endpoints, unless the independent Data Monitoring Committee (DMC) determines that exceptional pre-specified thresholds have been achieved, in which case the DMC will have the discretion to maintain blinding, which would allow inclusion of these patients in the final analysis.

BCV Oral Treatment for Smallpox

In April, we announced receipt of authorization from the FDA to initiate the rolling submission of our New Drug Application (NDA) for the approval of BCV as a medical countermeasure for smallpox. The Company is targeting completion of the rolling NDA submission for BCV late in the third quarter of 2020.

Also in June, BARDA exercised the fourth and final option to the BCV development contract for smallpox. The value of this option segment is up to approximately $4.6 million and will support smallpox regulatory filings related to the ongoing rolling NDA submission. The fourth option segment is scheduled to expire on February 15, 2021.

Appointment of Allen Melemed, M.D. as Chief Medical Officer

In June we announced the appointment of Allen Melemed, M.D. as our Chief Medical Officer. Prior to joining Chimerix, Dr. Melemed was employed by Eli Lilly and Company (Lilly), where he spent more than 20 years dedicated to the clinical development and approval of oncology medicines across a broad range of tumor types including VERZENIO®, CYRAMZA®, LARTRUVO®, ALIMTA® and RETEVMO® among others. Most recently, he served as a Distinguished Medical Fellow and Senior Director of Regulatory Affairs Oncology, North America at Lilly. In addition to his role at Lilly, Dr. Melemed was an attending physician in pediatric oncology at Indiana University (IU) School of Medicine, Riley Children's Hospital from 1996 to 2012.

Business Development Review

In addition to our completed transaction with Cantex, management is continuing to conduct a review and assessment of potential transaction opportunities with the goal of building our product candidate pipeline, including, but not limited to,

licensing, merger or acquisition transactions, issuing or transferring shares of common stock, or the license, purchase or sale of specific assets, in addition to other potential actions aimed at maximizing stockholder value. There can be no assurance that this review will result in the identification or consummation of any additional transaction.

FINANCIAL OVERVIEW

Revenues

To date, we have not generated any revenue from product sales. All of our revenue to date has been derived from a government grant and contract and the receipt of up-front proceeds under our collaboration and license agreements.

In February 2011, we entered into a contract with BARDA, a U.S. governmental agency that supports the advanced research and development, manufacturing, acquisition, and stockpiling of medical countermeasures. The contract originally consisted of an initial performance period, referred to as the base performance segment, which ended on May 31, 2013, plus up to four extension periods, referred to as option segments, which have all been exercised. The contract is a cost-plus fixed fee development contract. Under the contract as currently in effect, we may receive up to $75.8 million in expense reimbursement and $5.3 million in fees if all remaining option segments are exercised. We are currently performing under the second, third and fourth option segments of the contract during which we may receive up to a total of $23.9 million, $14.1 million and $4.6 million in expense reimbursement and fees, respectively. The second and third option segments are scheduled to end on August 20, 2020. The fourth option segment is scheduled to end on February 15, 2021. As of June 30, 2020, of the total funding the Company had invoiced an aggregate of $72.6 million with respect to the base performance segment and the four option segments. Under the BARDA contract, we recognized revenue of $1.4 million and $1.4 million during the three months ended June 30, 2020 and 2019, respectively, and we recognized revenue of $2.6 million and $3.8 million during the six months ended June 30, 2020 and 2019, respectively.

In September 2019, we entered into a license agreement with SymBio for worldwide rights to develop, manufacture and commercialize BCV in all human indications, excluding the use for treatment of orthopoxviruses, including smallpox. Under the contract, we received a $5.0 million upfront payment in October 2019 and could receive up to an additional $180.0 million in potential regulatory and commercial milestones. Since the license agreement was entered into in September 2019, we have recognized substantially all of the $5.0 million of revenue related to the upfront payment. The revenue from regulatory and commercial milestones and royalties from net sales will be recognized upon occurrence of the triggering events.

In the future, we may generate revenue from a combination of product sales, license fees, milestone payments and royalties from the sales of products developed under licenses of our intellectual property. We expect that any revenue we generate will fluctuate from quarter to quarter as a result of the timing and amount of license fees, milestone and other payments, and the amount and timing of payments that we receive upon the sale of our products, to the extent any are successfully commercialized. If we fail to complete the development of any product candidates in a timely manner or obtain regulatory approval for them, our ability to generate future revenue, and our results of operations and financial position, would be materially adversely affected.

Research and Development Expenses

Since our inception, we have focused our resources on our research and development activities, including conducting preclinical studies and clinical trials, manufacturing development efforts and activities related to regulatory filings for our product candidates. We recognize research and development expenses as they are incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors. We cannot determine with certainty the duration and completion costs of the current or future clinical studies of any product candidates. Our research and development expenses consist primarily of:

- fees paid to consultants and contract research organizations (CROs), including in connection with preclinical and clinical trials, and other related clinical trial fees, such as for investigator grants, patient screening, laboratory work, clinical trial database management, clinical trial material management and statistical compilation and analysis;
- salaries and related overhead expenses, which include stock option, restricted stock units and employee stock purchase program compensation and benefits, for personnel in research and development functions;
- payments to third-party manufacturers, which produce, test and package drug substance and drug product (including continued testing of process validation and stability);
- costs related to legal and compliance with regulatory requirements; and
- license fees for and milestone payments related to licensed products and technologies.

The table below summarizes our research and development expenses for the periods indicated (in thousands). Our direct research and development expenses consist primarily of external costs, such as fees paid to investigators, consultants, central laboratories and CROs, in connection with our clinical trials, preclinical development, and payments to third-party manufacturers of drug substance and drug product. We typically use our employee and infrastructure resources across multiple research and development programs.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Direct research and development expenses	$ 4,261	$ 7,264	$ 9,208	$ 14,948
Research and development personnel costs - excluding stock-based compensation	2,913	4,637	5,516	8,259
Research and development personnel costs - stock-based compensation	725	1,000	1,465	2,270
Indirect research and development expenses	679	926	1,338	1,865
Total research and development expenses	$ 8,578	$ 13,827	$ 17,527	$ 27,342

The successful development of product candidates is highly uncertain. At this time, we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the development of any product candidates or the period, if any, in which material net cash inflows from any product candidates may commence. This is due to the numerous risks and uncertainties associated with our business, as detailed in Part II, Item IA, “Risk Factors” in this Quarterly Report on Form 10-Q and in our other filings with the SEC.

Dociparstat sodium (DSTAT)

In July of 2019, we acquired DSTAT from Cantex Pharmaceuticals. In connection with the transaction, we recorded in 2019 a total of $65.0 million in expense. This is comprised of a $30.0 million upfront payment, $34.9 million for the fair value of the 10.0 million shares of common stock issued and $0.1 million in transaction costs. As we continue to focus on the development of DSTAT for treatment of AML patients and COVID-19, we expect research and development expense to increase with the ongoing and planned clinical trials. We are currently enrolling a Phase 2/3 study of DSTAT in ALI for patients with COVID-19 and plan to initiate a Phase 3 trial in AML in early 2021.

Brincidofovir

We are developing BCV for the treatment of smallpox. Under our cost-plus-fixed fee BARDA contract and additional costs we are not seeking reimbursement for from BARDA, we incurred expense in connection with the development of orthopoxvirus animal models, the demonstration of efficacy and pharmacokinetics of BCV in the animal models, the conduct of an open label clinical safety study for subjects with DNA viral infections, the manufacture and process validation of bulk drug substance and BCV 100 mg tablets, and submission of the NDA to the FDA. In addition, we have incurred additional supportive costs for the development of BCV for smallpox that we are not seeking reimbursement for from BARDA.

Historically, the majority of our research and development efforts have been focused on completing our Phase 3 trial of BCV for prevention of CMV in HCT recipients (SUPPRESS), our trial of BCV as a treatment for AdV (AdVise), the AdAPT study in pediatric HCT recipients and our other clinical and preclinical studies and other work needed to provide sufficient data supporting the safety, tolerability and efficacy of BCV for approval in the United States and equivalent health authority approval outside the United States. In May 2019, we discontinued both the oral and IV development programs of BCV in all indications other than smallpox and the associated clinical trials.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and related costs for employees in executive, finance, marketing, investor relations, information technology, legal, human resources and administrative support functions, including share-based compensation expenses and benefits. Other significant general and administrative expenses include costs related to commercial readiness efforts, accounting and legal services, costs of various consultants, director and officer liability insurance, occupancy costs and information systems.

Interest Income and Other, Net

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

Share-based Compensation

The Financial Accounting Standards Board authoritative guidance requires that share-based payment transactions with employees be recognized in the financial statements based on their fair value and recognized as compensation expense over the vesting period. Total consolidated share-based compensation expense of $1.4 million and $2.4 million was recognized in the three months ended June 30, 2020 and 2019, respectively, and $2.7 million and $6.4 million was recognized in the six months ended June 30, 2020 and 2019, respectively. The share-based compensation expense recognized included expense for stock options, RSUs and employee stock purchase plan purchase rights.

We estimate the fair value of our share-based awards to employees and directors using the Black-Scholes pricing model. This estimate is affected by our stock price as well as assumptions including the expected volatility, expected term, risk-free interest rate, expected dividend yield, expected rate of forfeiture and the fair value of the underlying common stock on the date of grant.

For performance-based RSUs, we begin to recognize the expense when it is deemed probable that the performance-based goal will be achieved. We evaluate the probability of achieving performance-based goals on a quarterly basis.

CRITICAL ACCOUNTING POLICIES AND SIGNIFICANT JUDGMENTS AND ESTIMATES

Our management's discussion and analysis of financial condition and results of operations is based on our unaudited consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. On an ongoing basis, we evaluate these estimates and judgments. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances. These estimates and assumptions form the basis for making judgments about the carrying values of assets and liabilities and the recording of revenues and expenses that are not readily apparent from other sources. Actual results and experiences may differ materially from these estimates. In addition, our reported financial condition and results of operations could vary if new accounting standards are enacted that are applicable to our business.

We discussed accounting policies and assumptions that involve a higher degree of judgment and complexity in Note 1 to our consolidated financial statements in our Annual Report on Form 10-K for the year ended December 31, 2019 filed with the SEC on February 25, 2020. There have been no material changes during the six months ended June 30, 2020 to our critical accounting policies, significant judgments and estimates disclosed in our Annual Report on Form 10-K for the year ended December 31, 2019.

RESULTS OF OPERATIONS

Comparison of the Three Months Ended June 30, 2020 and June 30, 2019

The following table summarizes our results of operations for the three months ended June 30, 2020 and June 30, 2019, together with the changes in those items (in thousands, except percentages):

	Three Months Ended June 30,		Dollar Change	% Change
	2020	2019	Increase/(Decrease)	
Revenues:				
Contract revenue	$ 1,396	$ 1,438	$ (42)	(2.9)%
Licensing revenue	6	—	6	*
Total revenues	1,402	1,438	(36)	(2.5)%
Operating expenses:				
Research and development	8,578	13,827	(5,249)	(38.0)%
General and administrative	3,110	6,312	(3,202)	(50.7)%
Total operating expenses	11,688	20,139	(8,451)	(42.0)%
Loss from operations	(10,286)	(18,701)	8,415	(45.0)%
Other income:				
Interest income and other, net	270	1,051	(781)	(74.3)%
Net loss	$ (10,016)	$ (17,650)	$ 7,634	(43.3)%

* Not meaningful or not calculable

Contract Revenue

For the three months ended June 30, 2020 and June 30, 2019, total contract revenue remained consistent at $1.4 million.

Research and Development Expenses

For the three months ended June 30, 2020, our research and development expenses decreased to $8.6 million compared to $13.8 million for the three months ended June 30, 2019. The decrease of $5.2 million, or 38.0%, is primarily related to the following:

- a decrease of $4.8 million related to the discontinuation of both the oral and IV BCV development programs and CMX521 for norovirus;
- a decrease of $2.3 million in compensation expenses as headcount was reduced as part of the Company's restructuring activities in May 2019;
- a decrease of $0.5 million in smallpox program expenses primarily related to the conclusion of animal studies; offset by
- an increase of $2.5 million in expenses primarily related to the conduct of clinical trials, animal studies, and drug manufacturing related to the development of DSTAT for first-line treatment of AML and COVID-19 patients.

General and Administrative Expenses

For the three months ended June 30, 2020, our general and administrative expenses decreased to $3.1 million compared to $6.3 million for the three months ended June 30, 2019. The decrease of $3.2 million, or 50.7%, is primarily related to the following:

- a decrease of $2.3 million in compensation expenses due to the Company's restructuring activities in May 2019; and
- a decrease of $0.9 million in legal, professional fees and operational expenses.

Interest Income and Other, Net

For the three months ended June 30, 2020, our interest income decreased to $0.3 million compared to $1.1 million for the three months ended June 30, 2019. This decrease is attributable to decreased interest earned on our cash and investments.

Comparison of the Six Months Ended June 30, 2020 and June 30, 2019

The following table summarizes our results of operations for the six months ended June 30, 2020 and June 30, 2019, together with the changes in those items (in thousands except percentages):

	Six Months Ended June 30,		Dollar Change	% Change
	2020	2019	Increase/(Decrease)	
Revenues:				
Contract revenue	$ 2,567	$ 3,794	$ (1,227)	(32.3)%
Licensing revenue	76	—	76	*
Total revenues	$ 2,643	$ 3,794	(1,151)	(30.3)%
Operating expenses:				
Research and development	17,527	$ 27,342	(9,815)	(35.9)%
General and administrative	6,315	13,998	(7,683)	(54.9)%
Total operating expenses	23,842	41,340	(17,498)	(42.3)%
Loss from operations	(21,199)	(37,546)	16,347	(43.5)%
Other income:				
Interest income and other, net	763	2,203	(1,440)	(65.4)%
Net loss	$ (20,436)	$ (35,343)	$ 14,907	(42.2)%

* Not meaningful or not calculable

Contract Revenue

For the six months ended June 30, 2020, total contract revenue decreased to $2.6 million compared to $3.8 million for the six months ended June 30, 2019. The decrease of $1.2 million, or 32.3%, is related to a decrease in reimbursable expenses under our contract with BARDA.

Research and Development Expenses

For the six months ended June 30, 2020, our research and development expenses decreased to $17.5 million compared to $27.3 million for the six months ended June 30, 2019. The decrease of $9.8 million, or 35.9%, is primarily related to the following:

- a decrease of $8.9 million in expenses related to the discontinuation of both the oral and IV BCV development programs and CMX521 for norovirus;
- a decrease of $3.9 million in compensation expenses as headcount was reduced as part of the Company's restructuring activities in May 2019;
- a decrease of $1.7 million in smallpox program expenses primarily related to the conclusion of animal studies; and
- a decrease of $0.5 million related to our BCV compassionate use program; offset by
- an increase of $5.3 million in expenses primarily related to the clinical trial expenses, animal studies, and drug manufacturing related to the development of DSTAT for first-line treatment of AML and COVID-19 patients.

General and Administrative Expenses

For the six months ended June 30, 2020, our general and administrative expenses decreased to $6.3 million compared to $14.0 million for the six months ended June 30, 2019. The decrease of $7.7 million, or 54.9%, is primarily related to the following:

- a decrease of $5.9 million in compensation expenses as headcount was reduced as part of the Company's restructuring activities in May 2019;
- a decrease of $1.5 million in operational expenses; and
- a decrease of $0.3 million in expenses related to commercial readiness.

Interest Income and Other, Net

For the six months ended June 30, 2020, our interest income and other, net decreased to $0.8 million compared to $2.2 million for the six months ended June 30, 2019. This decrease is attributable to decreased interest earned on our cash and investments.

LIQUIDITY AND CAPITAL RESOURCES

As of June 30, 2020, we had capital available to fund operations of approximately $96.0 million. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. We have incurred losses since our inception in 2000 and as of June 30, 2020, we had an accumulated deficit of $689.3 million. We may continue to incur losses for the foreseeable future. The size of our losses will depend, in part, on the rate of future expenditures and our ability to generate revenues.

On November 8, 2017, we entered into an at-the-market (ATM) sales agreement with Cowen and Company, LLC to sell up to $75 million of our common stock under a shelf registration statement filed in November 2017. As of December 31, 2018, we had sold an aggregate of 2.8 million shares of common stock pursuant to the ATM at a weighted average price per share of $4.00 for net offering proceeds of $10.9 million. We did not sell any shares of our common stock subsequent to 2018 and we terminated the ATM sales agreement with Cowen and Company, LLC in July 2020.

On August 10, 2020, we entered into an Open Market Sale Agreement℠ (the Jefferies Sales Agreement) with Jefferies LLC, as agent (Jefferies), pursuant to which we may offer and sell, from time to time through Jefferies, up to $75 million of shares of our common stock. Sales of our common stock made pursuant to the Jefferies Sales Agreement, if any, will be made under our shelf registration statement on Form S-3 filed with SEC on August 10, 2020 (the Registration Statement), following such time as the Registration Statement is declared effective by the SEC. The Registration Statement is subject to review by the SEC.

We cannot assure that adequate funding will be available on terms acceptable to us, if at all. Any additional equity financings will be dilutive to our stockholders and any additional debt may involve operating covenants that may restrict our business. If adequate funds are not available through these means, we may be required to curtail significantly one or more of our research or development programs, and any launch and other commercialization expenses for any of our products that may receive marketing approval. We cannot assure you that we will successfully develop or commercialize our products under development or that our products, if successfully developed, will generate revenues sufficient to enable us to earn a profit.

We believe that our existing cash, cash equivalents, and investments will enable us to fund our current operating expenses and capital requirements for at least the next 12 months. However, changing circumstances beyond our control may cause us to consume capital more rapidly than we currently anticipate.

Cash Flows

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

	Six Months Ended June 30,	
	2020	**2019**
Cash sources and uses:		
Net cash used in operating activities	$ (18,694)	$ (29,551)
Net cash provided by (used in) investing activities	54,487	(30,089)
Net cash provided by financing activities	807	178
Net increase (decrease) in cash and cash equivalents	$ 36,600	$ (59,462)

Operating Activities

Net cash used in operating activities of $18.7 million for the six months ended June 30, 2020 was primarily the result of our $20.4 million net loss and the change in operating assets and liabilities, partially offset by the add-back of non-cash expenses. The change in operating assets and liabilities includes a decrease of $2.5 million in accounts payable and accrued liabilities, partially offset by a decrease in prepaid expenses and other assets of $0.8 million and a decrease in accounts receivable of $0.9 million related to work on the BARDA contract. Non-cash expenses included add-backs of $2.7 million for share-based compensation and $0.2 million of depreciation of property and equipment, offset by $0.3 million of amortization of discount/premium on investments. Net cash used in operating activities of $29.6 million for the six months ended June 30, 2019 was primarily the result of our $35.3 million net loss, partially offset by the change in operating assets and liabilities and the add-

back of non-cash expenses. Non-cash expenses included add-backs of $6.4 million for share-based compensation and $0.3 million of depreciation of property and equipment, offset by $1.2 million of amortization of discount/premium on investments. The change in operating assets and liabilities includes an decrease in prepaid expenses and other assets of $0.4 million and an increase of $0.3 million in accounts payable and accrued liabilities, partially offset by an increase in accounts receivable of $0.4 million related to work on the BARDA contract.

Investing Activities

Net cash provided by investing activities of $54.5 million for the six months ended June 30, 2020 was primarily the result of the maturity of $80.7 million in short-term investments and the sale of $1.5 million in short-term investments, partially offset by the purchase of $27.7 million in short-term investments. Net cash used in investing activities of $30.1 million for the six months ended June 30, 2019 was primarily the result of the purchase of $107.1 million in short-term investments, partially offset by the maturity of $77.2 million in short-term investments.

Financing Activities

Net cash provided by financing activities of $0.8 million for the six months ended June 30, 2020 was primarily the result of $0.8 million in proceeds from the exercise of stock options and stock purchases through our ESPP. Net cash provided by financing activities of $0.2 million for the six months ended June 30, 2019 was primarily the result of $0.2 million in proceeds from the exercise of stock options and stock purchases through our ESPP.

CONTRACTUAL OBLIGATIONS AND COMMITMENTS

There have been no material changes to our contractual obligations and commitments outside the ordinary course of business from those disclosed under the heading “Management’s Discussion and Analysis of Financial Condition and Results of Operations-Contractual Obligations and Commitments” as contained in our Annual Report on Form 10-K for the year ended December 31, 2019 filed by us with the SEC on February 25, 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

Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S. interest rates. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio. Accordingly, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our investment portfolio.

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

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation has had a material effect on our results of operations for the three and six months ended June 30, 2020 or June 30, 2019.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our principal executive officer and principal financial officer, after evaluating the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, or Exchange Act) as of June 30, 2020, have concluded that, based on such evaluation, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC, and is accumulated and communicated to our management, including our principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

We routinely review our internal control over financial reporting and from time to time make changes intended to enhance the effectiveness of our internal control over financial reporting. We will continue to evaluate the effectiveness of our disclosure controls and procedures and internal control over financial reporting on an ongoing basis and will take action as appropriate. There have been no changes to our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act, during the second quarter of 2020 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II - OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

None.

ITEM 1A. RISK FACTORS

An investment in shares of our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information contained elsewhere in this report, before deciding whether to purchase, hold or sell shares of our common stock. The occurrence of any of the following risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. 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 risk factors included in our Annual Report on Form 10-K for the year ended December 31, 2019 filed with the Securities and Exchange Commission on February 25, 2020.

Risks Related To Our Financial Condition and Need For Additional Capital

We have incurred significant losses since our inception. We anticipate that we will continue to incur significant losses for the foreseeable future, and we may never achieve or maintain profitability.*

We are a biopharmaceutical company focused primarily on developing dociparstat (DSTAT) for the treatment of acute myeloid leukemia (AML) and the treatment of acute lung injury (ALI) in COVID-19 patients, and brincidofovir (BCV) for the treatment of smallpox. We have incurred significant net losses in each year since our inception, including net losses of $20.4 million and $35.3 million for the six months ended June 30, 2020 and 2019, respectively. As of June 30, 2020, we had an accumulated deficit of approximately $689.3 million.

To date, we have financed our operations primarily through the sale of equity securities and, to a lesser extent, through government funding, licensing fees and debt. We have devoted most of our financial resources to research and development, including our preclinical development activities and clinical trials. We have not completed development of any product candidates. We may continue to incur losses and negative cash flows for the foreseeable future. The size of any loss will depend, in part, on the rate of future expenditures and our ability to generate revenues. In particular, we expect to incur substantial expenses as we seek to:

- continue development and manufacturing activities of DSTAT for the treatment of AML, the treatment of ALI in COVID-19 patients, and other potential indications;
- continue the development of BCV for the treatment of smallpox as a medical countermeasure;
- obtain regulatory approvals for DSTAT and BCV;
- scale-up manufacturing capabilities to commercialize DSTAT and BCV in the event we receive regulatory approval;
- identify and in-license additional product candidates to expand our research and development pipeline;
- maintain, expand and protect our intellectual property portfolio; and
- continue our internal research and development efforts and seek to discover additional product candidates.

To become and remain profitable, we must succeed in developing and eventually commercializing products with significant market potential. This will require us to be successful in a range of challenging activities, including acquiring or discovering product candidates, completing preclinical testing and clinical trials of our product candidates, obtaining regulatory approval for these product candidates, and manufacturing, marketing and selling those products for which we may obtain regulatory approval. We are only in the preliminary stages of some of these activities.

To date, we have not obtained regulatory approval for any product candidate, and none of our product candidates have been commercialized. We may never succeed in developing or commercializing any product candidate. If we do not successfully develop or commercialize any product candidate, or if revenues from any products that do receive regulatory approvals are insufficient, we will not achieve profitability and our business may fail. Even if we successfully obtain regulatory approval to market a product candidate in the United States, our revenues are also dependent upon the size of markets outside of the United States, as well as our ability to obtain market approval and achieve commercial success outside of the United States.

Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

Our ability to generate future revenues from product sales is uncertain and depends upon our ability to successfully develop, obtain regulatory approval for, and commercialize product candidates.

Our ability to generate revenue and achieve profitability depends on our ability, alone or with collaborators, to successfully complete the development, obtain the necessary regulatory approvals and commercialize product candidates. We may not generate revenues from product sales for the foreseeable future. Our ability to generate future revenues from product sales depends heavily on our success in:

- obtaining favorable results for and advancing the development of DSTAT for the treatment of AML and ALI, and BCV for the treatment of smallpox;
- obtaining United States and foreign regulatory approval(s) for DSTAT and BCV;
- generating, licensing or otherwise acquiring a pipeline of product candidates which progress to clinical development, regulatory approval, and commercialization.

Conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data required to obtain regulatory approval and achieve product sales. Our anticipated development costs would likely increase if we do not obtain favorable results or if development of any product candidate is delayed. In particular, we would likely incur higher costs than we currently anticipate if development of any product candidate is delayed because we are required by the FDA or foreign regulatory authorities to perform studies or trials in addition to those that we currently anticipate, or we decide to conduct additional studies or trials for strategic reasons.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to predict with certainty the timing or amount of any increase in our anticipated development costs that will result should any additional trials be necessary.

In addition, any product candidate, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of products that we may not be commercially available for a number of years, if at all. Even if any product candidate is approved for commercial sale, we anticipate incurring significant costs in connection with commercialization. As a result, we cannot assure you that we will be able to generate revenues from sales of any approved product candidate, or that we will achieve or maintain profitability even if we do generate sales.

If we fail to obtain additional financing, we could be forced to delay, reduce or eliminate our product development programs, seek corporate partners for the development of our product development programs or relinquish or license on unfavorable terms, our rights to technologies or product candidates.*

Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is a time-consuming, expensive and uncertain process that takes years to complete. We believe that our existing capital available to fund operations will enable us to fund our current operating expenses and capital requirements for at least the next twelve months. Changing circumstances beyond our control may cause us to consume capital more rapidly than we currently anticipate, and our clinical trials may encounter technical, enrollment or other difficulties that could increase our development costs more than we expected, or because the FDA or foreign regulatory authorities require us to perform studies or trials in addition to those that we currently anticipate.

In July 2019, we entered into a License and Development Agreement with Cantex in which we acquired an exclusive worldwide license to develop and commercialize DSTAT. We are currently enrolling a Phase 2/3 study of DSTAT in ALI for patients with COVID-19 and plan to initiate a Phase 3 trial in AML in early 2021.

We are also pursuing additional external opportunities to build our pipeline of product candidates, and we may need to raise additional funds if we identify additional product candidates other than DSTAT and BCV, which we may obtain through one or more equity offerings, debt financings, government or other third-party funding, strategic alliances and licensing or collaboration arrangements.

Securing additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop and commercialize DSTAT, BCV, or any other product candidate. In addition, we cannot guarantee that

future financing will be available in sufficient amounts or on terms acceptable to us, if at all. If we are unable to raise additional capital when required or on acceptable terms, we may be required to:

- significantly delay, scale back or discontinue the development or commercialization of DSTAT, BCV or any other product candidate;
- seek corporate partners for DSTAT, BCV, or any other product candidate at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available; or
- relinquish or license on unfavorable terms, our rights to technologies or product candidates that we otherwise would seek to develop or commercialize ourselves.

If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we will be prevented from pursuing development and commercialization efforts, which will have a material adverse effect on our business, operating results and prospects and on our ability to develop our product candidates.

We are evaluating external assets to build our pipeline of product candidates and there can be no assurance that we will be successful in identifying or completing a transaction for a candidate, that any such transaction will result in additional value for our stockholders or that the process will not have an adverse impact on our business.

In early 2019, we initiated a review of external assets that could be added to our pipeline of product candidates. In July 2019, in connection with this process, we entered into a License and Development Agreement with Cantex Pharmaceuticals, Inc. (Cantex) pursuant to which we acquired exclusive worldwide rights to develop and commercialize DSTAT for any and all uses. Under the terms of the license agreement, we are responsible for, and bear the future costs of, worldwide development and commercialization of DSTAT. These costs will be substantial, and we may require additional capital in order to pursue the development and commercialization of DSTAT as planned. Moreover, the anticipated benefits of our license to DSTAT may never be realized due to the various risks and uncertainties associated with drug development detailed elsewhere in the following risk factors.

In addition to DSTAT, we may in-license or acquire additional assets, engage in a merger or acquisition transaction, issue additional shares of our common stock, or engage in other potential actions designed to maximize stockholder value. Our continuing review of external assets may not result in the identification or consummation of any transaction. The process of reviewing external opportunities may be time consuming and disruptive to our business operations and, if we are unable to effectively manage the process, our business, financial condition and results of operations could be adversely affected. We could incur substantial expenses associated with identifying, evaluating, negotiating, and consummating potential transactions. There can be no assurance that any potential additional transaction, if consummated, will provide greater value to our stockholders than that reflected in the current price of our common stock. In addition, once any potential additional transaction is consummated, we are likely to incur substantial costs associated with future development and testing of any new product candidate, which may require us to raise additional capital.

Risks Related to Clinical Development and Regulatory Approval

We face risks related to the coronavirus (COVID-19) outbreak, which could significantly disrupt our preclinical studies and clinical trials.*

The duration and the geographic impact of the business disruption and related financial impact resulting from the coronavirus cannot be reasonably estimated at this time and our business could be adversely impacted by the effects. We are currently conducting clinical trials with DSTAT in the United States for the treatment of COVID-19 patients and plan to initiate a clinical trial of DSTAT in AML in early 2021. We rely on independent clinical investigators, contract research organizations and other third-party service providers to assist us in managing, monitoring and otherwise carrying out our non-clinical studies and clinical trials, and the outbreak may affect their ability to devote sufficient time and resources to our programs. Similarly, clinical site initiation and patient enrollment may be delayed due to concerns for patient safety and prioritization of healthcare resources toward the COVID-19 pandemic. We also rely on third party suppliers and contract manufacturers to produce the drug product we utilize in our clinical trials, and the outbreak may cause delays in delivery and increases in the cost of APIs and drug product. As a result, the expected timeline for data readouts of our non-clinical studies and clinical trials and certain regulatory filings, such as completion of a smallpox NDA submission, may be negatively impacted, and our APIs and drug product may become more expensive to obtain. The COVID-19 pandemic is also causing disruption of global financial markets which, if sustained or recurrent, could make it more difficult for us to access capital. The ultimate impact of the COVID-19 pandemic is highly uncertain and subject to change, and may adversely affect our business, healthcare systems and the global economy as a whole.

Our product candidates are still under clinical development and may not obtain regulatory approval or be successfully commercialized.*

We have not marketed, distributed or sold any products. Our product candidates are DSTAT, which we are developing for the treatment of AML, the treatment of ALI in COVID-19 patients, and other potential indications and BCV, which we continue to develop for the treatment of smallpox as a medical countermeasure. We have initiated a Phase 2/3 clinical trial of DSTAT for the treatment of ALI in COVID-19 patients, and we plan to initiate a Phase 3 clinical study of DSTAT for the treatment of AML in early 2021.

There is no guarantee that our current or future clinical trials will be approved by regulators, and no guarantee that they will be completed or, if completed, will be successful, or if successful, will result in an approval for the sale of any of our product candidates. The success of each of DSTAT and BCV will depend on several factors, including the following:

- generating positive safety and efficacy data from our clinical trials of DSTAT;
- acceptance of data from our studies of oral BCV in animal models, including analyses necessary to bridge to a recommended human dose, by the FDA and foreign regulatory bodies;
- completing the rolling submission of our NDA for the approval of BCV as a medical countermeasure for smallpox;
- receipt of marketing approvals from the FDA and corresponding regulatory authorities outside the United States;
- establishing manufacturing capabilities necessary for a registration trial and commercialization of DSTAT;
- establishing commercial manufacturing capabilities for BCV;
- acceptance of the product, if approved for marketing;
- effectively competing with other therapies;
- a continued acceptable safety profile of the product following approval; and
- obtaining, maintaining, enforcing and defending intellectual property rights and claims.

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

We have never obtained regulatory approval for a drug and we may be unable to obtain, or may be delayed in obtaining, regulatory approval for* DSTAT *and* BCV.

We have never obtained regulatory approval for a drug. It is possible that the FDA and/or foreign health authorities, such as the EMA, may refuse to accept our NDA (or corresponding foreign application) for substantive review or may conclude after review of our data that our application is insufficient to obtain regulatory approval of DSTAT, BCV or both.

Through our continuing development contract with BARDA, we completed the second rabbitpox efficacy study as well as a pivotal efficacy study in the mouse model (ectromelia virus). We believe that efficacy data from these models could support the approval of BCV for the treatment of smallpox. In April, the Company announced that it had received clearance from the FDA for a rolling submission of an NDA. The Company expects the NDA submission to be completed in late 2020.

In July, we entered into a license agreement with Cantex where we acquired an exclusive license to global development and commercialization rights to DSTAT. We are currently enrolling a Phase 2/3 study of DSTAT in ALI for patients with COVID-19 and plan to initiate a Phase 3 trial in AML in early 2021.

We have not yet reached agreement with the FDA or foreign regulators regarding the adequacy of these planned studies, for either DSTAT or BCV, with respect to a potential approval for marketing. We may be required to conduct additional clinical, nonclinical or manufacturing validation studies and submit those data before reconsideration of our application occurs. Depending on the extent of these or any other required studies, approval of any NDA or application that we submit may be delayed by several years, or may require us to expend more resources than we have available. It is also possible that additional studies, if performed and completed, may not be considered sufficient by the FDA and/or foreign health authorities to approve our NDA or foreign application.

Any delay in obtaining, or an inability to obtain, regulatory approvals could prevent us from generating revenues and achieving and sustaining profitability. If any of these outcomes occur, we may be forced to abandon our development efforts for DSTAT and BCV, which would have a material adverse effect on our business and could potentially cause us to cease operations.

We depend on the successful completion of clinical trials for our product candidates, including* DSTAT *and* BCV. *The positive clinical results obtained for our product candidates in prior clinical studies may not be repeated in future clinical studies.*

Before obtaining regulatory approval for the sale of our product candidates, including DSTAT and BCV, we must conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. A failure of one or more of our clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. 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 for their products.

We may experience a number of unforeseen events during, or as a result of, clinical trials or animal efficacy studies for our product candidates, that could adversely affect the completion of our clinical trials, including:

- regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- clinical trials of our product candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;
- animal efficacy studies of our product candidates may produce negative or inconclusive results, and we may decide, or regulators may require us to conduct additional animal efficacy studies or abandon development programs;
- we might be required to change one of our clinical research organizations (CROs) during ongoing clinical programs;
- the number of subjects required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be insufficient or slower than we anticipate, or subjects may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- we may have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding that the subjects are being exposed to unacceptable health risks, or other factors such as the impact of the ongoing COVID-19 pandemic;
- regulators or institutional review boards may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements;
- the cost of clinical trials of our product candidates may be greater than we anticipate;
- we may encounter agency or judicial enforcement actions which impact our clinical trials;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate; or
- our product candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators to suspend or terminate the trials.

We do not know whether any clinical trials we may conduct will demonstrate adequate efficacy and safety to result in regulatory approval to market our product candidates, including DSTAT and BCV. If later stage clinical trials do not produce favorable results, our ability to obtain regulatory approval for either or both of DSTAT and BCV may be adversely impacted.

Delays in clinical trials are common and have many causes, and any delay could result in increased costs to us and jeopardize or delay our ability to obtain regulatory approval and commence product sales.*

Clinical testing is expensive, difficult to design and implement, can take many years to complete, and is uncertain as to outcome. We may experience delays in clinical trials at any stage of development and testing of our product candidates. Our planned clinical trials may not begin on time, have an effective design, enroll a sufficient number of subjects, or be completed on schedule, if at all.

Events which may result in a delay or unsuccessful completion of clinical trials, including our currently planned or future clinical trials for either DSTAT, BCV or both, include:

- inability to raise funding necessary to initiate or continue a trial;

- delays in obtaining, or failure to obtain, regulatory approval of Investigational New Drug applications or to commence a trial;
- delays in reaching agreement with the FDA and foreign health authorities on final trial design;
- imposition of a clinical hold following an inspection of our clinical trial operations or trial sites by the FDA or other regulatory authorities;
- delays caused by disagreements with existing CROs and/or clinical trial sites;
- delays in reaching agreement on acceptable terms with prospective CROs and clinical trial sites;
- delays in obtaining, or failure to obtain, required IRB or ethics committee (EC) approvals covering each site;
- delays in recruiting suitable patients to participate in a trial;
- delays in having subjects complete participation in a trial or return for post-treatment follow-up;
- delays caused by subjects dropping out of a trial due to side effects or otherwise;
- clinical sites declining to participate or dropping out of a trial to the detriment of enrollment;
- agency or judicial enforcement actions against us;
- time required to add new clinical sites; and
- delays by our contract manufacturers to produce and deliver sufficient supply of clinical trial materials.

Many of the above factors may be caused or exacerbated by the impact of the ongoing COVID-19 pandemic. If initiation or completion of any of our clinical trials for our product candidates, including either DSTAT or BCV, are delayed for any of the above reasons, our development costs may increase, our approval process could be delayed, any periods during which we may have the exclusive right to commercialize our product candidates may be reduced and our competitors may have more time to bring products to market before we do. Any of these events could impair our ability to generate revenues from product sales and impair our ability to generate regulatory and commercialization milestones and royalties, all of which could have a material adverse effect on our business.

Our product candidates may cause adverse effects or have other properties that could delay or prevent their regulatory approval or limit the scope of any approved label or market acceptance.

Adverse events (AEs) caused by our product candidates could cause us, other reviewing entities, clinical study sites or regulatory authorities to interrupt, delay or halt clinical studies and could result in the denial of regulatory approval. For example, subjects enrolled in our clinical trials for BCV have experienced gastrointestinal AEs and liver-related safety laboratory value changes. In addition, BCV is related to the approved drug cidofovir, a compound which has been shown to result in significant renal toxicity and impairment following use. As a second example, subjects enrolled in clinical trials for DSTAT have experienced febrile neutropenia and liver enzyme elevations. If an unacceptable frequency and/or severity of AEs are reported in our clinical trials for our product candidates, our ability to obtain regulatory approval for product candidates may be negatively impacted.

If any of our approved products cause serious or unexpected side effects prior to or after receiving market approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may approve the product only with a risk evaluation and mitigation strategy (REMS), potentially with restrictions on distribution and other elements to assure safe use (ETASU);
- regulatory authorities may withdraw their approval of the product or impose restrictions on its distribution in a form of a modified REMS;
- regulatory authorities may require the addition of labeling statements, such as warnings or contraindications;
- we may be required to change the way the product is administered or to conduct additional clinical studies;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidate and could substantially increase the costs of commercializing our product candidates.

***After the completion of our clinical trials, we cannot predict whether or when we will obtain regulatory approval to commercialize any of our product candidates and we cannot, therefore, predict the timing of any future revenue from* DSTAT *or* BCV.**

We cannot commercialize our product candidates, including DSTAT and BCV, until the appropriate regulatory authorities have reviewed and approved the product candidate. The regulatory agencies may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval for either of our product candidates. Additional delays in the United States may result if either DSTAT or BCV is brought before an FDA advisory committee, which could recommend

restrictions on approval or recommend non-approval of the product candidate. In the EU context, an Oral Explanation during MAA review could extend approval timelines and result in a Negative Opinion. A re-examination procedure is available in the EU whereby a Negative Opinion could be over-turned and become a Positive Opinion. New rapporteurs would be selected for the product. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory agency policy during the period of product development, clinical studies and the review process. As a result, we cannot predict when, if at all, we will receive any future revenue from commercialization of any of our product candidates.

Even if we obtain regulatory approval for* DSTAT *and* BCV*, we will still face extensive regulatory requirements and our products may face future development and regulatory difficulties.

Even if we obtain regulatory approval, the granting authority may still impose significant restrictions on the indicated uses, distribution or marketing of our product candidates, including DSTAT and BCV, or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance. For example, the labeling ultimately approved for our product candidates, including DSTAT and BCV, will likely include restrictions on use due to the specific patient population and manner of use in which the drug was evaluated and the safety and efficacy data obtained in those evaluations. In addition, the distribution of DSTAT and BCV may be tightly controlled through a REMS with ETASU, which are required medical interventions or other actions healthcare professionals need to execute prior to prescribing or dispensing the drug to the patient. Some actions may also be required in order for the patient to continue on treatment. For example, the label for BCV may be required to include a boxed warning, or "black box," regarding BCV being carcinogenic, teratogenic and impairing fertility in animal studies. The BCV labeling may also include warnings or black boxes pertaining to gastrointestinal AEs or liver-related safety laboratory value changes.

DSTAT, BCV and any other product candidates will also be subject to additional ongoing regulatory requirements governing the labeling, packaging, storage, distribution, safety surveillance, advertising, promotion, record-keeping and reporting of safety and other post-market information. In the United States, the holder of an approved NDA is obligated to monitor and report AEs and any failure of a product to meet the specifications in the NDA. The holder of an approved NDA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. If a REMS is required, the NDA holder may be required to monitor and evaluate those in the healthcare system who are responsible for implementing ETASU measures. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws. Moreover, EU and member countries impose strict restrictions on the promotion and marketing of drug products. The off-label promotion of medicinal products is prohibited in the U.S., EU and in other territories. The promotion of medicinal products that are not subject to a marketing authorization is also prohibited in the EU. Violations of the rules governing the promotion of medicinal products in the EU and in other territories could be penalized by administrative measures, fines and imprisonment.

In addition, manufacturers of drug products and their facilities are subject to payment of user fees and continual review and periodic inspections by regulatory authorities for compliance with cGMP, and adherence to commitments made in the application. If we, or a regulatory agency, discover previously unknown problems with a product, such as quality issues or AEs of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of any product candidates, a regulatory agency may:

- issue an untitled or warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve a pending application or supplements to an application submitted by us;
- recall and/or seize product; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize DSTAT, BCV and any other product candidates and inhibit our ability to generate revenues.

Obtaining FDA approval for any one of our products in the United States does not mean we will ever obtain approval for or commercialize* DSTAT, BCV, *or any other products outside of the United States, nor does approval of any of our products outside the United States mean we will ever obtain approval for or commercialize any other products inside the United States, all of which could limit our ability to realize their full market potential.

In order to market any products outside of the United States, we must establish and comply with numerous and varying regulatory requirements on a country-by-country basis regarding safety and efficacy. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not guarantee regulatory approval in any other country. Approval processes vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approval could result in difficulties and costs for us and require additional preclinical studies or clinical trials which could 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. 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 any markets. If we fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, or if regulatory approvals in international markets are delayed, our target market will be reduced and our ability to realize the full market potential of our products will be unrealized.

Conversely, approval by regulatory authorities outside the United States, such as the European Commission, does not ensure approval by the FDA. Moreover, clinical trials conducted outside the United States may not be accepted by the FDA.

Coverage and adequate reimbursement may not be available for our current or any future product candidates, which could make it difficult for us to sell profitably, if approved.

Market acceptance and sales of any product candidates that we commercialize, if approved, will depend in part on the extent to which coverage and adequate reimbursement will be available from third-party payers, including government health administration authorities, managed care organizations and private health insurers. Third-party payers decide which therapies they will pay for and establish reimbursement levels. Third-party payers in the United States often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies. However, decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payer-by-payer basis. One payer's determination to provide coverage for a drug does not assure that other payers will also provide coverage and adequate reimbursement for the drug. Additionally, a third-party payer's decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved. Third-party payers are increasingly challenging the price, examining the medical necessity and reviewing the cost-effectiveness of medical products, therapies and services, in addition to questioning their safety and efficacy. We cannot be sure that coverage and reimbursement in the United States or elsewhere will be available for any product that we may develop, and any reimbursement that may become available may be decreased or eliminated in the future.

Our relationships with investigators, health care professionals, consultants, third-party payers, and customers may be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and others play a primary role in the recommendation and prescribing of any products for which we obtain marketing approval. Our current business operations and future arrangements with investigators, healthcare professionals, consultants, third-party payers and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we research, market, sell and distribute our products for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations, include, but are not limited to, the following:

- the federal healthcare anti-kickback statute which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or paying remuneration (including any kickback, bribe or rebate), 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, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under federal healthcare programs such as Medicare and Medicaid;
- the federal civil and criminal false claims laws, including the Federal Civil False Claims Act (False Claims Act) which permit private individuals to bring a civil action on behalf of the federal government to enforce certain of these laws thought civil whistleblower or *qui tam* actions and the Federal Civil Monetary Penalties Act, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, to the federal government, claims for payment or approval that are false or fraudulent or from knowingly making a false

statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government;

- the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA) which, among other things, imposes criminal liability for knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or to obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payer (e.g., public or private) and knowingly or willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statement in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (HITECH) and their implementing regulations, and as amended again by the final HIPAA omnibus rule, Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notification Rules Under HITECH and the Genetic Information Nondiscrimination Act; Other Modifications to HIPAA, published in January 2013, which imposes certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without appropriate authorization by entities subject to the rule, such as health plans, healthcare clearinghouses and certain healthcare providers, as well as their business associates;
- the General Data Protection Regulation (GDPR), which impose obligations on companies in relation to the handling of personal data of individuals within the EU, along with related national legislation;
- mandated physician payments reporting laws and/or requirements throughout global jurisdictions, including EU member states, in which we conduct research and development and/or other business activities;
- the FDCA which prohibits, among other things, the adulteration or misbranding of drugs and devices;
- the federal transparency law, enacted as part of the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 (collectively, the ACA), and its implementing regulations, which requires manufacturers of drugs, devices, biologicals and medical supplies to report to the Centers for Medicare & Medicaid Services (CMS) information related to payments and other transfers of value made to physicians, as defined by such law, and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state 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 state governmental and non-governmental third-party payers, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; state and local laws that require the registration of pharmaceutical sales representatives; state laws and regulations that require manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; and state laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA.

Efforts to ensure that our business arrangements with third parties comply with applicable healthcare laws and regulations involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these or any other health regulatory laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, 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, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our financial results. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and/or divert our management's attention from the operation of our business. If any of the physicians or other providers or entities with whom we expect to do business are found to be not in compliance with applicable laws, they also may be subject to significant criminal, civil or administrative sanctions, including, but not limited to, exclusions from government funded healthcare programs, which could also materially affect our business.

Recently enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and affect the prices we may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any products for which we obtain marketing approval.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (Medicare Modernization Act) changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. Cost reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for any approved products. While the Medicare Modernization Act applies only to drug benefits for Medicare beneficiaries, private payers often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the Medicare Modernization Act may result in a similar reduction in payments from private payers.

Additionally, in March 2010, the ACA was enacted to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for health care and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. The ACA revises the definition of “average manufacturer price” for reporting purposes, which could increase the amount of Medicaid drug rebates to states. Further, the new law imposes a significant annual fee on companies that manufacture or import branded prescription drug products. New provisions affecting compliance have also been enacted, which may affect our business practices with health care practitioners. However, there have been, and continue to be, judicial and Congressional challenges to certain aspects of the ACA, as well as efforts by the Trump administration to repeal and replace certain aspects of the ACA, and we expect such challenges to continue. Since January 2017, President Trump has signed Executive Orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been enacted. The Tax Cuts and Jobs Act of 2017 (Tax Act) repealed, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA 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.” In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the ACA-mandated “Cadillac” tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. The Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, and also increased in the percentage that a drug manufacturer must discount the cost of prescription drugs from 50 percent to 70 percent. In December 2018, CMS published a new final rule permitting further collection and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On April 27, 2020, the U.S. Supreme Court reversed a federal circuit court decision that previously upheld Congress' denial of $12 billion in "risk corridor" funding to ACA qualified health plans. On December 14, 2018, a Texas U.S. District Court Judge ruled that ACA is unconstitutional in its entirety because the “individual mandate” was repealed by Congress as part of the Tax Act. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the ACA are invalid as well. On March 2, 2020, the U.S. Supreme Court has agreed to review this case, and oral arguments are expected to occur in the fall. It is unclear how this litigation and other efforts to repeal and replace ACA will impact ACA and our business. Congress also could consider additional legislation to repeal or repeal and replace other elements of the ACA.

Legislative and regulatory proposals have also been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products.

Additionally, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration’s budget proposal for fiscal year 2021 includes a $135 billion allowance to support legislative proposals seeking to reduce drug prices, increase

competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the Trump administration sent “principles” for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Further, the Trump administration previously released a "Blueprint" to lower drug prices and reduce out-of-pocket costs of drugs. This “Blueprint” contained additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out-of-pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services (DHHS) has solicited feedback on some of these measures and has implemented other measures under its existing authority. For example, in May 2019, CMS issued a final rule to allow Medicare Advantage plans the option to use step therapy for Part B drugs beginning January 1, 2020. This final rule codified CMS's policy change that was effective January 1, 2019. Although a number of these, and other measures may require additional authorization to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Such reform efforts are likely to continue the pressure on pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs.

Healthcare reform measures that may be adopted in the future may result in more rigorous coverage criteria, lower reimbursement, and additional downward pressure on the price that we receive for any future approved product. It is possible that additional governmental action may be taken to address the COVID-19 pandemic. For example, the Coronavirus Aid, Relief and Economic Security Act, or CARES Act, which was signed into law in March 2020 and is designed to provide financial support and resources to individuals and businesses affected by the COVID-19 pandemic, suspended the 2% Medicare rate reduction sequester from May 1, 2020 through December 31, 2020, and extended the sequester by one year, through 2030. Further, on April 18, 2020, CMS announced that qualified health plan issuers under the ACA may suspend activities related to the collection and reporting of quality data that would have otherwise been reported between May and June 2020 given the challenges healthcare providers are facing responding to the COVID-19 virus. We cannot predict what healthcare reform initiatives may be adopted in the future.

Risks Related to Our Reliance on Third Parties

We rely on third-party manufacturers to produce our preclinical and clinical drug supplies, and we intend to rely on third parties to produce commercial supplies of any approved product candidates.*

We do not own or operate, and we do not expect to own or operate, facilities for product manufacturing, storage and distribution, or testing with respect to either DSTAT or BCV. In the past, we have relied on third-party manufacturers for supply of our preclinical and clinical drug supplies. We expect that in the future we will continue to rely on such manufacturers for drug supply that will be used in clinical trials of both DSTAT and BCV, and for commercialization of any of our product candidates that receive regulatory approval.

In July 2019, we were assigned Cantex’s rights under a supply agreement with Scientific Protein Laboratories LLC (SPL) pursuant to which SPL will exclusively produce DSTAT for us through October 2030. We have agreed that SPL will be our exclusive provider of DSTAT bulk drug substance during the term of the agreement.

Our reliance on third-party manufacturers entails risks, including:

- inability to meet our product specifications and quality requirements consistently;
- delay or inability to procure or expand sufficient manufacturing capacity;
- manufacturing and product quality issues related to scale-up of manufacturing;
- costs and validation of new equipment and facilities required for scale-up;
- failure to comply with cGMP and similar foreign standards;
- inability to negotiate manufacturing agreements with third parties under commercially reasonable terms;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us;
- reliance on a limited number of sources, and in some cases, single sources for product components, such that if we are unable to secure a sufficient supply of these product components, we will be unable to manufacture and sell our product candidates in a timely fashion, in sufficient quantities or under acceptable terms;

- lack of qualified backup suppliers for those components that are currently purchased from a sole or single source supplier;
- operations of our third-party manufacturers or suppliers could be disrupted by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier, or other factors such as the impact of the ongoing COVID-19 pandemic;
- carrier disruptions or increased costs that are beyond our control; and
- failure to deliver our products under specified storage conditions and in a timely manner.

Any of these events could lead to clinical study delays, failure to obtain regulatory approval or impact our ability to successfully commercialize our products. Some of these events could be the basis for FDA or equivalent foreign regulator action, including injunction, recall, seizure, or total or partial suspension of production. As an example, we source a significant number of materials used in the manufacture of our products from China; the severity of the coronavirus (COVID-19) pandemic could make access to our existing supply chain difficult or impossible and could materially impact our business.

We rely on limited sources of supply for the drug components for each of* DSTAT *and* BCV, *and any disruption in the chain of supply for either of these product candidates may cause delays in their development and commercialization.*

Manufacturing of drug components is subject to certain FDA and comparable foreign qualifications with respect to manufacturing standards. We have validated the BCV drug substance manufacturing process at our selected contractor that will produce the commercial supply and possible procurement supply of drug substance. We have selected our BCV commercial and possible procurement tablet and suspension manufacturers to optimize tablet and suspension formulation production to meet forecasted commercial and procurement demand. There can be no assurance that such transfer to the selected vendors will be successful. We plan to validate the DSTAT drug substance and drug product processes prior to regulatory approval. It is our expectation that only one supplier of drug substance and one supplier of drug product will be qualified as vendors for both DSTAT and BCV with the FDA. If supply from an approved vendor is interrupted, there could be a significant disruption in commercial supply. An alternative vendor would need to be qualified through an NDA supplement which could result in further delay. The FDA or other regulatory agencies outside of the United States may also require additional studies if a new drug substance or drug product supplier is relied upon for commercial production.

These factors could cause the delay of clinical trials, regulatory submissions, required approvals or commercialization of DSTAT and BCV, and cause us to incur additional costs. As an example, we source a significant number of materials used in the manufacture of our products from China; the impact of the recent coronavirus outbreak could make access to our existing supply chain difficult or impossible and could materially harm our business. If our suppliers fail to deliver the required commercial quantities of active pharmaceutical ingredient on a timely basis and at commercially reasonable prices, and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical trials for DSTAT and BCV may be delayed, which could inhibit our ability to generate revenues.

***Manufacturing issues may arise that could increase product and regulatory approval costs or delay commercialization of* DSTAT *and* BCV.**

We have a validated process for drug substance and drug product production for BCV.

We plan to validate DSTAT drug substance and drug product processes prior to approval at our selected vendors. It is our expectation that only one supplier of drug substance and one supplier of drug product will be qualified as vendors for DSTAT with the FDA.

The validation processes, along with ongoing stability studies and analyses we are conducting, may reveal difficulties in our processes which could require resolution in order to proceed with our planned clinical trials and obtain regulatory approval for the commercial marketing of DSTAT and BCV. In the future, we may identify significant impurities, which could result in increased scrutiny by the regulatory agencies, delays in clinical program and regulatory approval for DSTAT and BCV, increases in our operating expenses, or failure to obtain or maintain approval for either DSTAT, BCV or both.

We depend on SymBio for developing and commercializing BCV for human diseases other than orthopoxviruses, including smallpox.

In 2019, we entered into a licensing arrangement with SymBio, whereby SymBio is responsible for the future development and commercialization of BCV. Under this arrangement, SymBio is responsible for conducting preclinical studies and clinical trials, obtaining required regulatory approvals for BCV in non-orthopox indications (e.g. smallpox), and manufacturing and commercializing BCV in those indications. Our right to receive milestone payments under the licensing agreement depends on

the achievement of certain development, regulatory and commercial milestones by SymBio and our ability to receive royalties under the agreement depends on SymBio's successful commercialization of BCV in the licensed indications.

The development and commercialization of the non-orthopox uses of BCV in humans and our ability to receive potential milestones and royalty payments under the license agreement with SymBio, would be adversely affected if SymBio:

- lacks or does not devote sufficient time and resource to the development and commercialization of BCV;
- lacks or does not devote sufficient capital to fund the development and commercialization of BCV;
- develops, either alone or with others, products that compete with BCV;
- fails to gain the requisite regulatory approvals for BCV;
- does not successfully commercialize BCV;
- does not conduct its activities in a timely manner;
- terminates its license with us;
- does not effectively pursue and enforce intellectual property rights relating to BCV; or
- merges with a third-party that wants to terminate the collaboration.

We have limited or no control over the occurrence of any of the foregoing. Furthermore, disagreements with SymBio could lead to litigation or arbitration, which could be time-consuming and expensive. If any of these issues arise, it may delay the development and commercialization milestones and royalties based on further development and sales of BCV.

We rely on third parties to conduct, supervise and monitor our clinical studies and related data, and if those third parties perform in an unsatisfactory manner, it may harm our business.

We rely on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials. While we have agreements governing their activities, we have limited influence over their actual performance. We have relied and plan to continue to rely upon CROs to monitor and manage data for our ongoing clinical programs for DSTAT, BCV and any other product candidates, as well as the execution of nonclinical studies. We control only certain aspects of our CROs' activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards and our reliance on CROs does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with the FDA's guidance for clinical trials conducted within the jurisdiction of the United States (or the foreign regulatory authority equivalent for clinical trials conducted outside the jurisdiction of the United States), which follows the International Council for Harmonization Good Clinical Practice (ICH GCP), which are regulations and guidelines enforced by the FDA for all of our product candidates in clinical development. The FDA enforces the ICH GCP through periodic inspections of trial sponsors, principal investigators and clinical trial sites. If we or our CROs fail to comply with the ICH GCP, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before approving our marketing applications.

Our CROs are not our employees, and we cannot control whether or not they devote sufficient time and resources to our ongoing clinical and nonclinical programs. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies, or other drug development activities which could harm our competitive position. We face the risk of potential unauthorized disclosure or misappropriation of our intellectual property by CROs, which may reduce our trade secret protection and allow our potential competitors to access and exploit our proprietary technology.

If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for any other reasons, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize DSTAT, BCV or any other product candidates. Disagreements with our CROs over contractual issues, including performance, compliance or compensation could lead to termination of CRO agreements and/or delays in our clinical program and risks to the accuracy and usability of clinical data. As a result, our financial results and the commercial prospects for DSTAT, BCV and any other product candidates that we develop would be harmed, our costs could increase, and our ability to generate revenues could be delayed.

Risks Related to Commercialization of Our Product Candidates

The commercial success of* DSTAT, BCV *and any other product candidates will depend upon the acceptance of these products by the medical community, including physicians, patients, pharmacists and health care payers.

If any of our product candidates, including DSTAT and BCV, receive marketing approval, they may nonetheless not gain sufficient market acceptance by physicians, patients, healthcare payers and others in the medical community. If these products do not achieve an adequate level of market acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of any of our product candidates, including DSTAT and BCV, will depend on a number of factors, including:

- demonstration of clinical safety and efficacy in our clinical trials;
- relative convenience, ease of administration and acceptance by physicians, patients, pharmacists and health care payers;
- prevalence and severity of any AEs;
- limitations or warnings contained in the FDA-approved labeling from Regulatory Authorities such as the FDA and EMA for the relevant product candidate;
- availability, efficacy and safety of alternative treatments;
- price and cost-effectiveness;
- effectiveness of our or any future collaborators' or competitor's sales and marketing strategies;
- ability to obtain hospital formulary approval;
- ability to ensure availability for product through appropriate channels;
- ability to maintain adequate inventory; and
- ability to obtain and maintain sufficient third-party coverage and adequate reimbursement, which may vary from country to country.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any revenue.

We currently do not have an organization for the sales and distribution of pharmaceutical products. The cost of establishing and maintaining such an organization may exceed the cost-effectiveness of doing so. In order to market any products that may be approved, including DSTAT and BCV, we must establish our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. We may enter into strategic partnerships with third parties to commercialize our product candidates, including BCV.

Our strategy for DSTAT is to establish a specialty sales force and/or collaborate with third parties to promote the product to healthcare professionals and third-party payers in the United States and elsewhere. We may elect to launch with a contract sales organization and utilize accompanying commercial support services provided by a contract sales organization. Our future collaboration partners, if any, may not dedicate sufficient resources to the commercialization of our product candidates or may otherwise fail in their commercialization due to factors beyond our control. If we are unable to establish effective collaborations to enable the distribution and sale of our product candidates to healthcare professionals and in geographical regions, including the United States, that are not covered by our own marketing and sales force, or if our potential future collaboration partners do not successfully commercialize our product candidates, our ability to generate revenues from product sales, including sales of DSTAT, will be adversely affected.

Establishing an internal or contract sales force involves many challenges, including:

- recruiting and retaining talented people;
- training employees that we recruit;
- establishing compliance standards;
- setting the appropriate system of incentives;
- managing additional headcount;
- ensuring that appropriate support functions are in place to support sales force organizational needs; and
- integrating a new business unit into an existing corporate architecture.

If we are unable to establish our own sales force or negotiate a strategic partnership for the commercialization of DSAT and BCV in any markets, we may be forced to delay the potential commercialization of DSTAT and BCV in those markets, reduce the scope of our sales or marketing activities for DSAT and BCV in those markets or undertake the commercialization activities for DSTAT and BCV in those markets at our own expense. If we elect to increase our expenditures to fund commercialization

activities ourselves, we will 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 will not be able to bring DSTAT and BCV to market or generate product revenue. Limited or lack of funding will impede our ability to achieve successful commercialization.

If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate sufficient product revenue and may not become profitable. We will be competing with many companies that currently have extensive and well-funded marketing and sales operations. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

In addition, there are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time-consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales, marketing and market access personnel.

If we obtain approval to commercialize any products outside of the United States, a variety of risks associated with international operations could materially adversely affect our business.*

If our product candidates are approved for commercialization, we may enter into agreements with third parties to market those product candidates outside the United States. We expect that we will be subject to additional risks related to entering into international business relationships, including:

- different regulatory requirements for drug approvals in the EU and other foreign countries;
- reduced protection for intellectual property rights;
- unexpected changes in tariffs, trade barriers and regulatory and labor requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country;
- differing payer reimbursement regimes, governmental payers or patient self-pay systems and price controls;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad;
- regulatory risks associated with cross-border transportation of animal-sourced material;
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters and other events outside our control including epidemics, pandemics, earthquakes, typhoons, floods and fires; and
- regulatory and compliance risks that relate to maintaining accurate information and control over activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, its books and records provisions or its anti-bribery provisions, or similar anti-bribery or anti-corruption laws and regulations.

We have limited experience in these areas. In addition, there are complex regulatory, tax, labor and other legal requirements imposed by both the EU and many of the individual countries in Europe with which we will need to comply. Many U.S.-based biopharmaceutical companies have found the process of marketing their own products outside the United States to be very challenging.

We face competition from other biotechnology and pharmaceutical companies and our operating results will suffer if we fail to compete effectively.

The biotechnology and pharmaceutical industries are intensely competitive. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, biotechnology companies and universities and other research institutions.

Many of our competitors have substantially greater financial, technical, commercial and other resources, such as larger research and development staff, stronger intellectual property portfolios and experienced marketing and manufacturing organizations and established sales forces. Additional mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors.

Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing, on an exclusive basis, drug products that are more effective or less costly than DSTAT and BCV or any other drug candidate that we are currently developing or that we may develop.

We will face competition from other drugs currently approved or that will be approved in the future for the same indications. Therefore, our ability to compete successfully will depend largely on our ability to:

- discover and develop medicines that are superior to other products in the market;
- demonstrate through our clinical trials that our product candidates, including DSTAT and BCV, are differentiated from existing and future therapies;
- attract qualified scientific, product development and commercial personnel;
- obtain and successfully defend and enforce patent and/or other proprietary protection for our medicines and technologies;
- obtain required regulatory approvals;
- successfully collaborate with pharmaceutical companies in the discovery, development and commercialization of new medicines;
- deliver a competitive value proposition compared to established competition and/or competitors who will enter the market before or after any of our product candidates, including DSTAT and BCV; and
- negotiate competitive pricing and reimbursement with third-party payers.

The availability of our competitors' products could affect the price we are able to charge, for DSTAT, BCV, and any other product candidate we develop. The inability to compete with existing or subsequently introduced drug products would have a material adverse impact on our business, financial condition and prospects.

Established pharmaceutical companies may invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make our product candidates, including DSTAT and BCV, less competitive. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. Accordingly, our competitors may succeed in obtaining patent protection, receiving FDA approval or discovering, developing and commercializing medicines before we do, which would have a material adverse impact on our business.

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.

The success of our business depends primarily upon our ability to identify, develop and commercialize product candidates. Because we have limited financial and managerial resources, we focus on research programs and product candidates for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or other indications that later prove to have greater commercial potential.

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 research methodology or that of our collaboration partners may be unsuccessful in identifying potential product candidates;
- our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval; and
- our collaboration partners may change their development profiles for potential product candidates or abandon a therapeutic area.

If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our research efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful.

If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been advantageous for us to retain sole development and commercialization rights.

Risks Related to Our Intellectual Property

If we are unable to obtain or protect intellectual property rights related to our products and product candidates, we may not be able to compete effectively in our market.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our products and product candidates. The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover the products in the United States or in other countries. If this were to occur, early generic competition could be expected against DSTAT, BCV, and any other product candidates we may develop. There is no assurance that all of the potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing based on a pending patent application. Even if patents do successfully issue, third parties may challenge their validity, enforceability, scope or ownership, which may result in such patents, or our rights to such patents, being narrowed or invalidated.

Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing around our claims. If the patent applications we hold or license with respect to DSTAT and BCV fail to issue or if their breadth or strength of protection is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our products. We cannot offer any assurances about which, if any, patents will issue or whether any issued patents will be found not invalid and not unenforceable, will go unthreatened by third parties or will adequately protect our products and product candidates. Further, if we encounter delays in regulatory approvals, the period of time during which we could market DSTAT and BCV under patent protection could be reduced. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we or our licensors were the first to file any patent application related to DSTAT, BCV or any other product candidates. Furthermore, if third parties have filed such patent applications, an interference proceeding in the United States can be provoked by a third party or instituted by us to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license it from the prevailing party, which may not be possible. In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and other elements of our drug discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. Although we expect all of our employees to assign their inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed, that such agreements provide adequate protection and will not be breached, that our trade secrets and other confidential proprietary information will not otherwise be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. If we are unable to prevent material disclosure of the non-patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

Further, the laws of some foreign countries do not protect patents and other proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property abroad. We may also fail to pursue or obtain patents and other intellectual property protection relating to our products and product candidates in all foreign countries.

Finally, certain of our activities and our licensors' activities have been funded, and may in the future be funded, by the U.S. federal government. When new technologies are developed with U.S. federal government funding, the government obtains certain rights in any resulting patents, including a nonexclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise "march-in" rights to use or allow third parties to use our patented technology. The government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the U.S. government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U.S. industry. In addition, U.S. government-funded inventions must be reported to the government, U.S. government funding must be disclosed in any resulting patent applications, and our rights in such inventions may be subject to certain requirements to manufacture products in the United States.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts or otherwise affect our business.

Our commercial success depends in part on our avoiding infringement and other violations of the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions and inter party reexamination proceedings before the United States Patent and Trademark Office (U.S. PTO) and its foreign counterparts. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we and our collaborators are developing product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, and as we gain greater visibility and market exposure as a public company, the risk increases that our product candidates or other business activities may be subject to claims of infringement of the patent and other proprietary rights of third parties. Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of DSTAT, BCV and/or any other product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire.

Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy, the holders of any such patent may be able to block our ability to develop and commercialize the applicable product candidate unless we obtained a license or until such patent expires. In either case, such a license may not be available on commercially reasonable terms or at all. In addition, we may be subject to claims that we are infringing other intellectual property rights, such as trademarks or copyrights, or misappropriating the trade secrets of others, and to the extent that our employees, consultants or contractors use intellectual property or proprietary information owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful infringement or other intellectual property claim against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our affected products, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates, and we have done so from time to time. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize one or more of our product candidates, which could harm our business significantly. We cannot provide any assurances that third-party patents do not exist which might be enforced against our products or product candidates, resulting in either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties.

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

Competitors may infringe or otherwise violate our patents, the patents of our licensors or our other intellectual property rights. To counter infringement or unauthorized use, we may be required to file legal claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing. The initiation of a claim against a third party may also cause the third party to bring counterclaims against us.

We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States. Our business could be harmed if in a

litigation the prevailing party does not offer us a license on commercially reasonable terms. Any litigation or other proceedings to enforce our intellectual property rights may fail, and even if successful, may result in substantial costs and distract our management and other employees.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment 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 on any issued patent are due to be paid to the U.S. PTO and foreign patent agencies in several stages over the lifetime of the patent. The U.S. PTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process.

While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we or our licensors that control the prosecution and maintenance of our licensed patents fail to maintain the patents and patent applications covering our product candidates, we may lose our rights and our competitors might be able to enter the market, which would have a material adverse effect on our business.

Risks Related to Our United States Government Contracts and Grants

There can be no assurances that we will be able to enter into a contract with BARDA to act as the sole supplier for the procurement of* BCV *for the treatment of smallpox.

In April 2015, BARDA posted a notice of intent to use other than full and open competition to award a sole source contract to us for the procurement of BCV for the treatment of smallpox. In May 2015, BARDA posted an approved justification for the use of other than full and open competition for the contract. In July 2015, BARDA issued a RFP entitled “2015 Procurement of a Second Smallpox Antiviral Drug for the Strategic National Stockpile.” In August 2015, we submitted a response to the RFP and we subsequently engaged in discussions with BARDA regarding our response. The issuance of that RFP did not culminate with agreement for the sole source supply of BCV for the Strategic National Stockpile (SNS).

We remain in discussions with BARDA regarding the potential to supply BCV to the SNS, however, there can be no assurances that a future RFP for BCV procurement will be issued.

Furthermore, in the event that BARDA issues an RFP for procurement of a smallpox antiviral therapeutic, there can be no assurance that we would reach agreement with BARDA on terms related to the manufacture and delivery of BCV to the SNS. Among the material terms to be negotiated and agreed to are: price, volume, and payment and delivery schedules, as we currently do not have BCV commercial product in inventory that would be available for immediate delivery.

Unfavorable provisions in government contracts, including our contract with BARDA, may harm our business, financial condition and operating results.

United States government contracts typically contain unfavorable provisions and are subject to audit and modification by the government at its sole discretion, which will subject us to additional risks. For example, under our contract with BARDA, the U.S. government has the power to unilaterally:

- audit and object to any BARDA contract-related costs and fees on grounds that they are not allowable under the FAR, and require us to reimburse all such costs and fees;
- suspend or prevent us for a set period of time from receiving new contracts or extending our existing contract based on violations or suspected violations of laws or regulations;

- claim nonexclusive, nontransferable rights to product manufactured and intellectual property developed under the BARDA contract and may, under certain circumstances, such as circumstances involving public health and safety, license such inventions to third parties without our consent;
- cancel, terminate or suspend our BARDA contract based on violations or suspected violations of laws or regulations;
- terminate our BARDA contract in whole or in part for the convenience of the government for any reason or no reason, including if funds become unavailable to the applicable governmental agency;
- reduce the scope and value of our BARDA contract;
- decline to exercise an option to continue the BARDA contract;
- direct the course of a development program in a manner not chosen by the government contractor;
- require us to perform the option segments even if doing so may cause us to forego or delay the pursuit of other opportunities with greater commercial potential;
- take actions that result in a longer development timeline than expected; and
- change certain terms and conditions in our BARDA contract.

The U.S. government also has the right to terminate the BARDA contract if termination is in the government's interest, or if we default by failing to perform in accordance with the milestones set forth in the contract. Termination-for-convenience provisions generally enable us to recover only our costs incurred or committed (plus a portion of the agreed fee) and settlement expenses on the work completed prior to termination. Except for the amount of services received by the government, termination-for-default provisions do not permit recovery of fees.

In addition, we must comply with numerous laws and regulations that affect how we conduct business with the United States government. Among the most significant government contracting regulations that affect our business are:

- FAR, and agency-specific regulations supplements to the FAR, which comprehensively regulate the procurement, formation, administration and performance of government contracts and implement federal procurement policy in numerous areas, such as employment practices, protection of the environment, accuracy and retention periods of records, recording and charging of costs, treatment of laboratory animals and human subject research;
- business ethics and public integrity obligations, which govern conflicts of interest and the hiring of former government employees, restrict the granting of gratuities and funding of lobbying activities and incorporate other requirements such as the Anti-Kickback Act and the Foreign Corrupt Practices Act;
- export and import control laws and regulations; and
- laws, regulations and executive orders restricting the use and dissemination of information classified for national security purposes and the exportation of certain products and technical data.

Furthermore, we may be required to enter into agreements and subcontracts with third parties, including suppliers, consultants and other third-party contractors, in order to satisfy our contractual obligations pursuant to our agreements with the U.S. government. Negotiating and entering into such arrangements can be time-consuming and we may not be able to reach agreement with such third parties. Any such agreement must also be compliant with the terms of our government contract. Any delay or inability to enter into such arrangements or entering into such arrangements in a manner that is non-compliant with the terms of our contract, may result in violations of our contract.

As a result of these unfavorable provisions, we must undertake significant compliance activities. The diversion of resources from commercial programs to these compliance activities, as well as the exercise by the U.S. government of any rights under these provisions, could materially harm our business.

Our business is subject to audit by the U.S. government, including under our contract with BARDA, and a negative audit could adversely affect our business.

United States government agencies, such as the DHHS, routinely audit and investigate government contractors and recipients of federal grants, including our contract with BARDA. These agencies review a contractor's performance under its contracts, cost structure and compliance with applicable laws, regulations and standards.

The DHHS can also review the adequacy of, and a contractor's compliance with, its internal control systems and policies, including the contractor's purchasing, property, estimating, compensation and management information systems. Any costs found to be improperly allocated to a specific contract will not be reimbursed, while such costs already reimbursed must be

refunded. If an audit uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions, including:

- termination of contracts;
- forfeiture of profits;
- suspension of payments;
- fines; and
- suspension or prohibition from conducting business with the U.S. government.

In addition, we could suffer serious reputational harm if allegations of impropriety were made against us by the U.S. government, which could adversely affect our business.

Agreements with government agencies may lead to claims against us under the Federal False Claims Act, and these claims could result in substantial fines and other penalties.

The biopharmaceutical industry is, and in recent years has been, under heightened scrutiny as the subject of government investigations and enforcement actions. Our BARDA contract is subject to substantial financial penalties under the Federal Civil Monetary Penalties Act and the False Claims Act. The False Claims Act imposes liability on any person who, among other things, knowingly presents, or causes to be presented, a false record or statement material to a false or fraudulent claim paid or approved by the government. Under the False Claims Act's "whistleblower" provisions, private enforcement of fraud claims against businesses on behalf of the U.S. government has increased due in part to amendments to the False Claims Act that encourage private individuals to sue on behalf of the government. These whistleblower suits, known as *qui tam* actions, may be filed by private individuals, including present and former employees. The False Claims Act provides for treble damages and significant civil monetary penalties per false claim. If our operations are found to be in violation of any of these laws, or any other governmental regulations that apply to us, we may be subject to penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from the Medicare and Medicaid programs, and the curtailment or restructuring of our operations. Any penalties, damages, fines, exclusions, curtailment, or restructuring of our operations could adversely affect our ability to operate our business and our financial results.

Risks Related to Our Business Operations and Industry

Increasing demand for compassionate use of our unapproved therapies could result in losses.

Recent media attention to individual patients' expanded access requests has resulted in the introduction of legislation at the local and national level referred to as "Right to Try" laws, such as the Right to Try Act, which are intended to give patients access to unapproved therapies. New and emerging legislation regarding expanded access to unapproved drugs for life-threatening illnesses could negatively impact our business in the future. In addition, during 2014, we were the target of an active and disruptive social media campaign related to a request for access to BCV. If we experience similar social media campaigns in the future, we may experience significant disruption to our business which could result in losses.

A possible consequence of both activism and legislation in this area is the need for us to initiate an unanticipated expanded access program or to make DSTAT or BCV more widely available sooner than anticipated. We are a small company with limited resources and unanticipated trials or access programs could result in diversion of resources from our primary goals.

In addition, patients who receive access to unapproved drugs through compassionate use or expanded access programs have life-threatening illnesses and have exhausted all other available therapies. The risk for serious adverse events in this patient population is high which could have a negative impact on the safety profile of DSTAT and BCV, which could cause significant delays or an inability to successfully commercialize DSTAT and BCV, which could materially harm our business. We may also need to restructure or pause ongoing compassionate use and/or expanded access programs in order to perform the controlled clinical trials required for regulatory approval and successful commercialization of DSTAT and BCV, which could prompt adverse publicity or other disruptions related to current or potential participants in such programs. The BCV compassionate use program is expected to end by the end of the third quarter of 2020 when the current clinical supply is no longer available.

If we fail to comply with the extensive legal and regulatory requirements affecting the health care industry, we could face increased costs, delays in the development of our product candidates, penalties and a loss of business.

Our activities, and the activities of our collaborators, partners and third-party providers, are subject to extensive government regulation and oversight both in the United States and in foreign jurisdictions. The FDA and comparable agencies in other jurisdictions directly regulate many of our most critical business activities, including the conduct of preclinical and clinical

studies, product manufacturing, advertising and promotion, product distribution, adverse event reporting and product risk management. States increasingly have been placing greater restrictions on the marketing practices of healthcare companies. In addition, pharmaceutical and biotechnology companies have been the target of lawsuits and investigations alleging violations of government regulations, including claims asserting submission of incorrect pricing information, impermissible off-label promotion of pharmaceutical products, payments intended to influence the referral of federal or state healthcare business, submission of false claims for government reimbursement, antitrust violations, violations of the Foreign Corrupt Practices Act, or violations related to environmental matters. Violations of governmental regulation may be punishable by criminal, civil and administrative sanctions, including fines and civil monetary penalties and exclusion from participation in government programs, including Medicare and Medicaid. In addition to penalties for violation of laws and regulations, we could be required to delay or terminate the development of our product candidates, or we could be required to repay amounts we received from government payers, or pay additional rebates and interest if we are found to have miscalculated the pricing information we have submitted to the government. Whether or not we have complied with the law, an investigation into alleged unlawful conduct could increase our expenses, damage our reputation, divert management time and attention and adversely affect our business.

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.*

We are highly dependent on the principal members of our executive team. While we have entered into employment agreements or offer letters with each of our executive officers, any of them could leave our employment at any time, as all of our employees are “at will” employees. To help attract, retain, and motivate qualified employees, we use share-based incentive awards such as employee stock options and restricted stock units. Due to the decline in our stock price that has occurred since December 2015, a large percentage of the options held by our employees are underwater. As of June 30, 2020, approximately 40% of all outstanding options had an exercise price above the closing price of the stock on that date. As a result, the current situation provides a considerable challenge to maintaining employee motivation, as well as creating a serious threat to retention until a recovery commences. If our share-based compensation ceases to be viewed as a valuable benefit, our ability to attract, retain, and motivate employees could be weakened, which could harm our results of operations.

We do not maintain “key person” insurance for any of our executives or other employees. Recruiting and retaining other qualified employees for our business, including scientific and technical personnel, will also be critical to our success. There is currently a shortage of appropriately skilled executives in our industry, which is likely to continue. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. As a result, competition for skilled personnel is intense and the turnover rate can be high. We may not be able to attract and retain personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. In addition, failure of any of our clinical studies may make it more challenging to recruit and retain qualified personnel. The inability to recruit or loss of the services of any executive or key employee may adversely affect the progress of our research, development and commercialization objectives.

In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us, which could also adversely affect the progress of our research, development and commercialization objectives.

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

The use of our product candidates, including DSTAT and BCV, in clinical studies and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. On occasion, large judgments have been awarded in class action lawsuits based on drugs that had unanticipated adverse effects. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation and significant negative media attention;
- withdrawal of participants from our clinical studies;
- significant costs to defend the related litigation;
- distraction of management’s attention from our primary business;
- substantial monetary awards to patients or other claimants;
- inability to commercialize our product candidates, including DSTAT and BCV; and
- decreased demand for our product candidates, if approved for commercial sale.

We currently carry $15 million in product liability insurance covering our clinical trials. Our current product liability insurance coverage may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive and in the future we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. If and when we obtain marketing approval for our product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may be unable to obtain product liability insurance on commercially reasonable terms or in adequate amounts. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business.

The COVID-19 pandemic, which began in late 2019 and has spread worldwide, may affect our ability to initiate or continue our planned, ongoing and future clinical trials, disrupt regulatory activities, disrupt our ability to maintain a commercial infrastructure for our products or have other adverse effects on our business and operations. In addition, this pandemic has caused substantial disruption in the financial markets and may adversely impact economies worldwide, both of which could result in adverse effects on our business and operations.*

The COVID-19 pandemic, which began in December 2019, has spread worldwide, causing many governments to implement measures to slow the spread of the outbreak through quarantines, strict travel restrictions, heightened border scrutiny, and other measures. The outbreak and government measures taken in response have also had a significant impact, both direct and indirect, on businesses and commerce, as worker shortages have occurred; supply chains have been disrupted; facilities and production have been suspended; and demand for certain goods and services, such as medical services and supplies, has spiked, while demand for other goods and services, such as travel, has fallen. The future progression of the pandemic and its effects on our business and operations are uncertain.

In the event of a continuation of shelter-in-place orders and/or other mandated local travel restrictions, our employees conducting research and development activities may not be able to access our research space, and our core activities may be significantly limited or curtailed, possibly for an extended period of time. In light of the pandemic, we may choose to pause certain research programs, delay the start of certain longer-term clinical studies and limit hiring.

We may face difficulties recruiting or retaining patients in our ongoing clinical trials because of the pandemic. For example, patients for our proposed trial of DSTAT as a treatment for AML may be unable or unwilling to visit clinical trial sites which may impact the collection of important clinical trial data or such a delay may alter DSTAT's potential time to market which could reduce its commercial attractiveness in a competitive AML marketplace. In addition, limitations in the ability to visit sites may adversely affect, our enrollment timelines for our clinical trials, and may adversely affect the timing of completion of our clinical trials or our ability to complete clinical trials in a fully compliant manner. Additionally, the potential suspension of clinical trial activity at clinical trial sites may have an adverse impact on our clinical trial plans and timelines.

We may face disruptions that may affect our ability to initiate and complete clinical trials including disruptions in procuring items that are essential for our research and development activities, including, for example, raw materials used in the manufacturing of our product candidates and laboratory supplies for planned and ongoing clinical trials, in each case, for which there may be shortages because of ongoing efforts to address the outbreak. Site initiation, participant recruitment and enrollment, participant dosing, distribution of clinical trial materials, study monitoring and data analysis may be paused or delayed due to changes in hospital or university policies, federal, state or local regulations, prioritization of hospital resources toward pandemic efforts, or other reasons related to the pandemic. We may face manufacturing disruptions or disruptions related to the ability to obtain necessary institutional review board, or IRB, or other necessary site approvals, as well as other delays at clinical trial sites.

The response to the COVID-19 pandemic may redirect resources with respect to regulatory and intellectual property matters in a way that would adversely impact our ability to progress regulatory approvals and protect our intellectual property. In addition, we may face impediments to regulatory meetings and approvals due to measures intended to limit in-person interactions.

The COVID-19 pandemic has already caused significant disruptions in the financial markets, and may continue to cause such disruptions, which could impact our ability to raise additional funds through public offerings and may also impact the volatility of our stock price and trading in our stock. Moreover, it is possible the pandemic will significantly impact economies worldwide, which could result in adverse effects on our business and operations. We cannot be certain what the overall impact of the COVID-19 pandemic will be on our business and it has the potential to adversely affect our business, financial condition, results of operations, and prospects.

Risks Related To Our Common Stock

The market price of our common stock is likely to be volatile, and you may not be able to resell your shares at or above your purchase price.*

The trading price of our common stock has been volatile, and is likely to continue to be volatile for the foreseeable future. Our stock price is subject to wide fluctuations in response to a variety of factors, including the following:

- results of clinical trials of our product candidates or those of our competitors;
- any delay in filing an application for any of our product candidates, including the initiation of a rolling NDA submission for BCV for smallpox later this year, and any adverse development or perceived adverse development with respect to regulatory review of that application;
- failure to successfully develop and commercialize our product candidates, including DSTAT and BCV;
- termination of any of our license or collaboration agreements;
- any agency or judicial enforcement actions against us;
- inability to obtain additional funding;
- regulatory or legal developments in the United States and other countries applicable to our product candidates;
- adverse regulatory decisions;
- changes in the structure of healthcare payment systems;
- inability to obtain adequate product supply for our product candidates, or the inability to do so at acceptable prices;
- introduction of new products, services or technologies by our competitors;
- failure to meet or exceed financial projections we provide to the public;
- failure to meet or exceed the estimates and projections of the investment community;
- changes in the market valuations of similar companies;
- market conditions in the pharmaceutical and biotechnology sectors, and the issuance of new or changed securities analysts' reports or recommendations;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- significant lawsuits (including patent or stockholder litigation), and disputes or other developments relating to proprietary rights (including patents, litigation matters and our ability to obtain patent protection for our technologies);
- additions or departures of key scientific or management personnel;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- general economic, industry and market conditions, including the impact of the ongoing COVID-19 pandemic; and
- the other factors described in this "Risk Factors" section.

In addition, the stock market in general, and The Nasdaq Global Market in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance.

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

Based upon shares of common stock outstanding as of June 30, 2020, our then executive officers, directors, 5% stockholders (known to us through available information) and their affiliates beneficially owned approximately 29.7% of our voting stock. Therefore, these stockholders have the ability to substantially influence us through this ownership position. For example, these stockholders, if they choose to act together, may be able to influence the election of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This concentration of voting power could delay or prevent an acquisition of our company on terms that other stockholders may desire.

Failure to establish and maintain adequate finance infrastructure and accounting systems and controls could impair our ability to comply with the financial reporting and internal controls requirements for publicly traded companies.

As a public company, we operate in an increasingly demanding regulatory environment, which requires us to comply with the Sarbanes-Oxley Act of 2002, and the related rules and regulations of the Securities and Exchange Commission, expanded disclosure requirements, accelerated reporting requirements and more complex accounting rules. Company responsibilities

required by the Sarbanes-Oxley Act include establishing and maintaining corporate oversight and adequate internal control over financial reporting and disclosure controls and procedures. Effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent financial fraud.

Our compliance with Section 404 of the Sarbanes-Oxley Act has required and will continue to require that we incur substantial accounting expense and expend significant management efforts. In this or future years, our testing, or the subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls that we would be required to remediate in a timely manner so as to be able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act each year. If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner each year, we could be subject to sanctions or investigations by the Securities and Exchange Commission, The Nasdaq Stock Market or other regulatory authorities which would require additional financial and management resources and could adversely affect the market price of our common stock. Furthermore, if we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed and investors could lose confidence in our reported financial information.

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

We expect that significant additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

In July 2019, we entered into a license agreement with Cantex where we acquired an exclusive license to global development and commercialization rights to DSTAT. As partial consideration for our rights under the license agreement, we issued to Cantex 10,000,000 shares of our common stock. We are continuing to review additional potential transactions to add to our pipeline of product candidates, and these transactions could involve the issuance of additional shares of common stock or other equity securities.

Pursuant to our 2013 Equity Incentive Plan (the 2013 Plan), our management is authorized to grant stock options to our employees, directors and consultants. The number of shares available for future grant under our 2013 Plan will automatically increase on January 1st each year, through January 1, 2023, by an amount equal to 4.0% of all shares of our capital stock outstanding as of December 31st of the preceding calendar year, subject to the ability of our board of directors to take action to reduce the size of such increase in any given year. In addition, our board of directors may grant or provide for the grant of rights to purchase shares of our common stock pursuant to the terms of our 2013 Employee Stock Purchase Plan (ESPP). The number of shares of our common stock reserved for issuance under our ESPP will automatically increase on January 1st each year, through January 1, 2023, by an amount equal to the lesser of 422,535 shares or one percent of all shares of our capital stock outstanding as of December 31st of the preceding calendar year, subject to the ability of our board of directors to take action to reduce the size of such increase in any given year. Unless our board of directors elects not to increase the number of shares underlying our 2013 Plan and ESPP each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

We have broad discretion in the use of the net proceeds from our financing transactions and may not use them effectively.

Our management has broad discretion in the application of the net proceeds from our financing transactions. Because of the number and variability of factors that will determine our use of the net proceeds from our financing transactions, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we have invested the net proceeds from our financing transactions in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

Volatility in our stock price could subject us 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 pharmaceutical 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.

Comprehensive tax reform could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law the Tax Act which significantly revises the Internal Revenue Code of 1986, as amended. The Tax Act, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses generated in taxable years beginning after December 31, 2017, to 80% of current year taxable income, elimination of most carrybacks of net operating losses arising in taxable years ending after December 31, 2017, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Tax Act is uncertain and our business and financial condition could be adversely affected. In addition, it is uncertain if and to what extent various states will conform to the Tax Act. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. We urge our stockholders to consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

Our effective tax rate may fluctuate, and we may incur obligations in tax jurisdictions in excess of accrued amounts.

Our effective tax rate is derived from a combination of applicable tax rates in the various places that we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each of such places. Nevertheless, our effective tax rate may be different than experienced in the past due to numerous factors, including passage of the Tax Act, the results of examinations and audits of our tax filings, our inability to secure or sustain acceptable agreements with tax authorities, changes in accounting for income taxes and changes in tax laws. Any of these factors could cause us to experience an effective tax rate significantly different from previous periods or our current expectations and may result in tax obligations in excess of amounts accrued in our financial statements.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

Our U.S. net operating loss, or NOL, carryforwards generated in tax years ending on or prior to December 31, 2017, are only permitted to be carried forward for 20 years under applicable U.S. tax law. Under the Tax Act, our federal NOLs generated in tax years ending after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal NOLs generated in tax years beginning after December 31, 2017, is limited. It is uncertain if and to what extent various states will conform to the Tax Act. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change U.S. tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We have determined that a Section 382 ownership change occurred in 2002 and 2007 resulting in limitations of at least $64,000 and $762,000, respectively, of losses incurred prior to the respective ownership change dates. In addition, we have determined that another Section 382 ownership change occurred in 2013 with our IPO, our most recent private placement and other transactions that have occurred since 2007, resulting in a limitation of at least $6.7 million of losses incurred prior to the ownership change date. We may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership. As a result, our pre-2018 NOL carryforwards may expire prior to being used, and our NOL carryforwards generated in 2018 and thereafter will be subject to a percentage limitation. In addition, it is possible that we have in the past undergone, and in the future may undergo, additional ownership changes that could limit 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. 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. As a result, we may be unable to use all or a material portion of our NOLs and other tax attributes.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, would be your sole source of gain.

We have never declared or paid any cash dividends on our common stock. We currently anticipate that we will retain any future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash

dividends for the foreseeable future. As a result, capital appreciation, if any, of our common stock would be your sole source of gain on an investment in our common stock for the foreseeable future.

Provisions in our corporate charter documents and under Delaware law could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders and may prevent attempts by our stockholders to replace or remove our current management.

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

- authorizing the issuance of "blank check" preferred stock, the terms of which may be established and shares of which may be issued without stockholder approval which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors;
- allowing the authorized number of our directors to be changed only by resolution of our board of directors;
- limiting the removal of directors;
- creating a staggered board of directors;
- requiring that stockholder actions must be effected at a duly called stockholder meeting and prohibiting stockholder actions by written consent;
- eliminating the ability of stockholders to call a special meeting of stockholders; and
- establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at duly called stockholder meetings.

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 the affirmative vote of the holders of at least 66 2/3 percent of the voting power of all of our then outstanding common stock.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, we are subject to Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with an interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder, unless such transactions are approved by our board of directors. This provision could have the effect of delaying or preventing a change of control, whether or not it is desired by or beneficial to our stockholders. Further, other provisions of Delaware law may also discourage, delay or prevent someone from acquiring us or merging with us.

Risks Related to Information Technology

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex, and interdependent information technology (IT) systems, including Internet-based systems, to support business processes as well as internal and external communications. The size and complexity of our IT systems make us potentially vulnerable to IT system breakdowns, malicious intrusion, and computer viruses, which may result in the impairment of our ability to operate our business effectively.

In addition, our systems are potentially vulnerable to data security breaches-whether by employees or others-which may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, clinical trial patients, customers, business partners and others.

Any such disruption or security breach could result in legal proceedings, liability under laws that protect the privacy of personal information, regulatory penalties, disruptions to our operations and collaborations, and damage to our reputation, which could harm our business and results of operations.

Increasing use of social media could give rise to liability, breaches of data security, or reputational damage.

We and our employees are increasingly utilizing social media tools as a means of communication both internally and externally. Despite our efforts to monitor evolving social media communication guidelines and comply with applicable rules, there is risk

that the use of social media by us or our employees to communicate about our products or business may cause us to be found in violation of applicable laws and regulations. In addition, our employees may knowingly or inadvertently make use of social media in ways that may not comply with our social media policy or other legal or contractual requirements, which may give rise to liability, lead to the loss of trade secrets or other intellectual property, or result in public exposure of personal information of our employees, clinical trial patients, customers, and others. Furthermore, negative posts or comments about us or our products in social media could seriously damage our reputation, brand image, and goodwill.

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

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

On August 10, 2020, we entered into an Open Market Sale Agreement[SM] (the Sales Agreement) with Jefferies LLC, as agent (Jefferies), pursuant to which we may offer and sell, from time to time through Jefferies, up to $75.0 million of shares of our common stock (the ATM Shares).

Sales of our common stock made pursuant to the Sales Agreement, if any, will be made under our shelf registration statement on Form S-3 filed with SEC on August 10, 2020 (the Registration Statement), following such time as the Registration Statement is declared effective by the SEC. The Registration Statement is subject to review by the SEC.

Under the Sales Agreement, Jefferies may sell the ATM Shares by any method permitted by law and deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the Securities Act), including sales made directly on the Nasdaq Stock Market, on any other existing trading market for our common stock or to or through a market maker. In addition, under the Sales Agreement, Jefferies may sell the ATM Shares by any other method permitted by law. We may instruct Jefferies not to sell the ATM Shares if the sales cannot be effected at or above the price designated by us from time to time.

We are not obligated to make any sales of the ATM Shares under the Sales Agreement. The offering of the ATM Shares pursuant to the Sales Agreement will terminate upon the earlier of (a) the sale of all of the ATM Shares subject to the Sales Agreement or (b) the termination of the Sales Agreement by Jefferies or us, as permitted therein.

The Sales Agreement contains customary representations, warranties and agreements by us, and customary indemnification and contribution rights and obligations of the parties. We will pay Jefferies a sales commission of 3.0% of the aggregate gross proceeds from each sale of the ATM Shares. We will also reimburse Jefferies for certain specified expenses in connection with entering into the Sales Agreement.

The Sales Agreement is filed as Exhibit 1.1 to this report, and the description of the terms of the Sales Agreement is qualified in its entirety by reference to such exhibit. A copy of the opinion of Cooley LLP relating to the legality of the issuance and sale of the ATM Shares is attached as Exhibit 5.1 hereto.

ITEM 6. EXHIBITS

The following exhibits are filed as part of this report:

Number	Description
1.1	Open Market Sale Agreement℠, dated August 10, 2020, by and between the Registrant and Jefferies LLC.
3.1(1)	Amended and Restated Certificate of Incorporation of the Registrant.
3.2(1)	Amended and Restated Bylaws of the Registrant.
4.1(2)	Form of Common Stock Certificate of the Registrant.
5.1	Opinion of Cooley LLP.
10.1	Contract modification No. 59, dated May 11, 2020, to the contract by and between the Registrant and the Biomedical Advanced Research and Development Authority of the United States Department of Health and Human Services dated February 16, 2011, as amended.
10.2*	Contract modification No. 60, dated June 17, 2020, to the contract by and between the Registrant and the Biomedical Advanced Research and Development Authority of the United States Department of Health and Human Services dated February 16, 2011, as amended.
10.3*	Contract modification No. 61, dated July 28, 2020, to the contract by and between the Registrant and the Biomedical Advanced Research and Development Authority of the United States Department of Health and Human Services dated February 16, 2011, as amended.
10.4	Ninth Amendment to Office Lease, dated June 24, 2020, by and between the Registrant and BRI 1875 Meridian, LLC.
10.5*	Second Amendment to Lease Agreement, dated July 30, 2020, by and between the Registrant and CLPF-Research Center, LLC.
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350, as adopted pursuant Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document - - the instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.
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 (formatted as Inline XBRL and contained in Exhibit 101).

*Certain confidential information contained in this exhibit, marked by brackets, has been omitted pursuant to Item 601 of Regulation S-K.

(1) Incorporated by reference to the corresponding exhibit in Chimerix, Inc.'s Current Report on Form 8-K (No. 001-35867), filed with the SEC on April 16, 2013.

(2) Incorporated by reference to the corresponding exhibit in Chimerix, Inc.'s Registration Statement on Form S-1 (No. 333-187145), as amended.

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.

CHIMERIX, INC.

August 10, 2020 By: /s/ Michael A. Sherman

Michael A. Sherman

President and Chief Executive Officer

August 10, 2020 By: /s/ Michael T. Andriole

Michael T. Andriole

Chief Business and Financial Officer

OPEN MARKET SALE AGREEMENT[SM]

August 10, 2020

JEFFERIES LLC
520 Madison Avenue
New York, New York 10022

Ladies and Gentlemen:

Chimerix, Inc., a Delaware corporation (the "**Company**"), proposes, subject to the terms and conditions stated herein, to issue and sell from time to time through Jefferies LLC, as sales agent and/or principal (the "**Agent**"), shares of the Company's common stock, par value $0.001 per share (the "**Common Shares**"), having an aggregate offering price of up to $75,000,000 on the terms set forth in this agreement (this "**Agreement**").

Section 1. DEFINITIONS

(a) Certain Definitions. For purposes of this Agreement, capitalized terms used herein and not otherwise defined shall have the following respective meanings:

"**Affiliate**" of a Person means another Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such first- mentioned Person. The term "control" (including the terms "controlling," "controlled by" and "under common control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

"**Agency Period**" means the period commencing on the date of this Agreement and expiring on the earliest to occur of (x) the date on which the Agent shall have placed the Maximum Program Amount pursuant to this Agreement and (y) the date this Agreement is terminated pursuant to Section 7.

"**Commission**" means the U.S. Securities and Exchange Commission.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder.

"**Floor Price**" means the minimum price set by the Company in the Issuance Notice below which the Agent shall not sell Shares during the applicable period set forth in the Issuance Notice, which may be adjusted by the Company at any time during the period set forth in the Issuance Notice by delivering written notice of such change to the Agent and which in no event shall be less than $1.00 without the prior written consent of the Agent, which may be withheld in the Agent's sole discretion.

[SM] "Open Market Sale Agreement" is a service mark of Jefferies LLC

"**Issuance Amount**" means the aggregate Sales Price of the Shares to be sold by the Agent pursuant to any Issuance Notice.

"**Issuance Notice**" means a written notice delivered to the Agent by the Company in accordance with this Agreement in the form attached hereto as Exhibit A that is executed by its Chief Executive Officer, President, Chief Financial Officer or General Counsel.

"**Issuance Notice Date**" means any Trading Day during the Agency Period that an Issuance Notice is delivered pursuant to Section 3(b)(i).

"**Issuance Price**" means the Sales Price less the Selling Commission.

"**Maximum Program Amount**" means Common Shares with an aggregate Sales Price of the lesser of (a) the number or dollar amount of Common Shares registered under the effective Registration Statement (as defined below) pursuant to which the offering is being made, (b) the number of authorized but unissued Common Shares (less Common Shares issuable upon exercise, conversion or exchange of any outstanding securities of the Company or otherwise reserved from the Company's authorized capital stock), (c) the number or dollar amount of Common Shares permitted to be sold under Form S-3 (including General Instruction I.B.6 thereof, if applicable), or (d) the number or dollar amount of Common Shares for which the Company has filed a Prospectus (defined below).

"**Person**" means an individual or a corporation, partnership, limited liability company, trust, incorporated or unincorporated association, joint venture, joint stock company, governmental authority or other entity of any kind.

"**Principal Market**" means The Nasdaq Global Market or such other national securities exchange on which the Common Shares, including any Shares, are then listed.

"**Sales Price**" means the actual sale execution price of each Share placed by the Agent pursuant to this Agreement.

"**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations of the Commission thereunder.

"**Selling Commission**" means three percent (3%) of the gross proceeds of Shares sold pursuant to this Agreement, or as otherwise agreed between the Company and the Agent with respect to any Shares sold pursuant to this Agreement.

"**Settlement Date**" means the second business day following each Trading Day during the period set forth in the Issuance Notice on which Shares are sold pursuant to this Agreement, when the Company shall deliver to the Agent the amount of Shares sold on such Trading Day and the Agent shall deliver to the Company the Issuance Price received on such sales.

"**Shares**" shall mean the Company's Common Shares issued or issuable pursuant to this Agreement.

"**Trading Day**" means any day on which the Principal Market is open for trading.

Section 2. REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrants to, and agrees with, the Agent that as of (1) the date of this Agreement, (2) each Issuance Notice Date, (3) each Settlement Date, (4) each Triggering Event Date (as defined below) and (5) as of each Time of Sale (each of the times referenced above is referred to herein as a "**Representation Date**"), except as may be disclosed in the Registration Statement or Prospectus (each, as defined below) (including any documents incorporated by reference therein and any supplements thereto) on or before a Representation Date:

(a) Registration Statement. The Company has prepared and will file with the Commission a shelf registration statement on Form S-3 that contains a base prospectus (the "**Base Prospectus**"). Such registration statement registers the issuance and sale by the Company of the Shares under the Securities Act. The Company may file one or more additional registration statements from time to time that will contain a base prospectus and related prospectus or prospectus supplement, if applicable, with respect to the Shares. Except where the context otherwise requires, such registration statement(s), including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, including all financial statements, exhibits and schedules thereto and all documents incorporated or deemed to be incorporated therein by reference pursuant to Item 12 of Form S-3 under the Securities Act as from time to time amended or supplemented, is herein referred to as the "**Registration Statement**," and the prospectus constituting a part of such registration statement(s), together with any prospectus supplement filed with the Commission pursuant to Rule 424(b) under the Securities Act relating to a particular issuance of the Shares, including all documents incorporated or deemed to be incorporated therein by reference pursuant to Item 12 of Form S-3 under the Securities Act, in each case, as from time to time amended or supplemented, is referred to herein as the "**Prospectus**," except that if any revised prospectus is provided to the Agent by the Company for use in connection with the offering of the Shares that is not required to be filed by the Company pursuant to Rule 424(b) under the Securities Act, the term "**Prospectus**" shall refer to such revised prospectus from and after the time it is first provided to the Agent for such use. The Registration Statement at the time it originally became effective is herein called the "**Original Registration Statement**." As used in this Agreement, the terms "amendment" or "supplement" when applied to the Registration Statement or the Prospectus shall be deemed to include the filing by the Company with the Commission of any document under the Exchange Act after the date hereof that is or is deemed to be incorporated therein by reference.

All references in this Agreement to financial statements and schedules and other information which is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information which is or is deemed to be incorporated by reference in or otherwise deemed under the Securities Act to be a part of or included in the Registration Statement or the Prospectus, as the case may be, as of any specified date; and all references in this Agreement to amendments or supplements to the Registration Statement or the Prospectus shall be deemed to mean and include, without limitation, the filing of any document under the Exchange Act which is or is deemed to be incorporated by reference in or otherwise deemed under the Securities Act to be a part of or included in the Registration Statement or the Prospectus, as the case may be, as of any specified date.

At the time the Registration Statement was or will be originally declared effective and at the time the Company's most recent annual report on Form 10-K was filed with the Commission, if later, the Company met the then-applicable requirements for use of Form S-3 under the Securities Act. During the Agency Period, each time the Company files an annual report on Form 10-K the Company will meet the then-applicable requirements for use of Form S-3 under the Securities Act.

(b) Compliance with Registration Requirements. Except as of the date of this Agreement, the Original Registration Statement and any Rule 462(b) Registration Statement will have been filed and will be declared effective by the Commission under the Securities Act. The Company has complied to the Commission's satisfaction with all requests of the Commission for additional or supplemental information. No stop order suspending the effectiveness of the Registration Statement or any Rule 462(b) Registration Statement is in effect and no proceedings for such purpose have been instituted or are pending or, to the knowledge of the Company, are contemplated or threatened by the Commission.

The Prospectus, when filed, complied or will comply in all material respects with the Securities Act and, if filed with the Commission through its Electronic Data Gathering, Analysis and Retrieval system ("**EDGAR**") (except as may be permitted by Regulation S-T under the Securities Act), was substantially identical to the copy thereof delivered to the Agent for use in connection with the issuance and sale of the Shares. Each of the Registration Statement, any Rule 462(b) Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective and as of each Representation Date, complied and will comply in all material respects with the Securities Act and did not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. As of the date of this Agreement, the Prospectus and any Free Writing Prospectus (as defined below) considered together (collectively, the "**Time of Sale Information**"), did not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. The Prospectus, as amended or supplemented, as of its date and as of each Representation Date, did not and will not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the three immediately preceding sentences do not apply to statements in or omissions from the Registration Statement, any Rule 462(b) Registration Statement, or any post-effective amendment thereto, or the Prospectus, or any amendments or supplements thereto, made in reliance upon and in conformity with information relating to the Agent furnished to the Company in writing by the Agent expressly for use therein, it being understood and agreed that the only such information furnished by the Agent to the Company consists of the information described in Section 6 below. There are no contracts or other documents required to be described in the Prospectus or to be filed as exhibits to the Registration Statement which have not been described or filed as required. The Registration Statement and the offer and sale of the Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said rule.

(c) Offering Materials furnished to Agent. As of each Representation Date other than the date of this Agreement, the Company has delivered to the Agent one complete copy of the Registration Statement and a copy of each consent and certificate of experts filed as a part thereof, and conformed copies of the Registration Statement (without exhibits) and the Prospectus, as amended or supplemented, in such quantities and at such places as the Agent has reasonably requested.

(d) Not an Ineligible Issuer. The Company currently is not an "ineligible issuer," as defined in Rule 405 of the rules and regulation of the Commission. The Company agrees to notify the Agent promptly upon the Company becoming an "ineligible issuer."

(e) Distribution of Offering Material By the Company. The Company has not distributed and will not distribute, prior to the completion of the Agent's distribution of the Shares, any offering material in connection with the offering and sale of the Shares other than the Prospectus or the Registration Statement.

(f) The Sales Agreement. This Agreement has been duly authorized, executed and delivered by, and is a valid and binding agreement of, the Company, enforceable in accordance with its terms, except as rights to indemnification hereunder may be limited by applicable law and except as the enforcement hereof may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting the rights and remedies of creditors or by general equitable principles.

(g) Authorization of the Shares. The Shares, when issued and delivered, will be duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company against payment therefor pursuant to this Agreement, will be duly authorized, validly issued, fully paid and nonassessable, and the issuance and sale of the Shares will not be subject to any preemptive rights, rights of first refusal or other similar rights to subscribe for or purchase the Shares.

(h) No Applicable Registration or Other Similar Rights. There are no persons with registration or other similar rights to have any equity or debt securities registered for sale under the Registration Statement or included in the offering contemplated by this Agreement, except for such rights as have been duly waived.

(i) No Material Adverse Change. There has not occurred any material adverse change, or any development involving a prospective material adverse change, in the condition, financial or otherwise, or in the earnings, business, operations or prospects of the Company and its subsidiary, taken as a whole (any such change is called a "**Material Adverse Change**"), from that set forth in the Registration Statement and the Prospectus.

(j) Independent Accountants. Ernst & Young LLP, who has expressed its opinion with respect to the financial statements (which term as used in this Agreement includes the related notes thereto) and supporting schedules filed with the Commission or incorporated by reference as a part of the Registration Statement and included in the Prospectus, is an independent registered public accounting firm with respect to the Company within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Securities Act.

(k) Preparation of the Financial Statements. The financial statements (including the related notes thereto) of the Company incorporated by reference in the Registration Statement and the Prospectus comply as to form in all material respects with the applicable requirements of the Securities Act and present fairly in all material respects the financial position of the Company as of the dates indicated and the results of its operations and the changes in its cash flows for the periods specified; such financial statements have been prepared in conformity with generally accepted accounting principles in the United States ("**GAAP**") applied on a consistent basis throughout the periods covered thereby, except as otherwise noted therein and except in the case of unaudited, interim financial statements, which do not contain certain footnotes as permitted by the rules of the Commission, and any supporting schedules included in or incorporated by reference in the Registration Statement present fairly in all material respects the information required to be stated therein; and the other financial information included in or incorporated by reference in the Registration Statement and the Prospectus has been derived from the accounting records of the Company and, in the case of the financial information under the heading "Dilution," presents fairly in all material respects the information shown thereby. No other financial statements or supporting schedules are required to be included in the Registration Statement or the Prospectus. All disclosures contained in the Registration Statement and the Prospectus that constitute non-GAAP financial measures (as defined by the rules and regulations under the Securities Act and the Exchange Act) comply in all material respects with Regulation G under the Exchange Act and Item 10 of Regulation S-K under the Securities Act, as applicable.

(l) eXtensible Business Reporting Language. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(m) Incorporation and Good Standing of the Company. The Company has been duly incorporated, is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation, has the corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Prospectus and is duly qualified to transact business and is in good standing in each jurisdiction in which the conduct of its business or its ownership or leasing of property requires such qualification, except to the extent that the failure to be so qualified or be in good standing would not be reasonably expected to have a material adverse effect on the Company and its subsidiary, taken as a whole.

(n) Subsidiaries. The Company does not have any "subsidiaries" (as defined in Regulation S-X of the Exchange Act) other than Chimerix UK Limited and Chimerix IRL Limited, and does not have any "significant subsidiaries" (as defined in Regulation S-X). The subsidiary of the Company has been duly incorporated, is validly existing as a corporation in good standing under the laws of the jurisdiction of its incorporation, has the corporate power and authority to own its property and to conduct its business and is duly qualified to transact business and is in good standing in each jurisdiction in which the conduct of its business or its ownership or leasing of property requires such qualification, except to the extent that the failure to be so qualified or be in good standing would not have a material adverse effect on the Company and its subsidiary, taken as a whole; all of the issued shares of capital stock of the subsidiary of the Company have been duly

and validly authorized and issued, are fully paid and non-assessable and are owned directly by the Company, free and clear of all liens, encumbrances, equities or claims.

(o) Capital Stock Matters. The authorized capital stock of the Company will conform as to legal matters to the description thereof contained in each of the Registration Statement and the Prospectus. The Common Shares outstanding have been duly authorized and are validly issued, fully paid and non-assessable and are not subject to any pre-emptive or similar rights; except as described in or expressly contemplated by the Registration Statement and the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights), warrants or options to acquire from the Company, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interest in the Company, or any contract, commitment, agreement, understanding or arrangement of any kind to which the Company is a party relating to the issuance of any capital stock of the Company, any such convertible or exchangeable securities or any such rights, warrants or options. Except as described in the Registration Statement and the Prospectus, the issuance and sale of the Shares as contemplated hereby will not cause any holder of any shares of capital stock, securities convertible into or exchangeable or exercisable for capital stock or options, warrants or other rights to purchase capital stock or any other securities of the Company to have any right to acquire any shares of capital stock of the Company, in each case from the Company.

(p) Stock Options. With respect to the stock options (the "**Stock Options**") granted pursuant to the stock-based compensation plans of the Company (the "**Company Stock Plans**"), (i) each Stock Option intended to qualify as an "incentive stock option" under Section 422 of the United States Internal Revenue Code of 1986, as amended (the "**Code**"), so qualifies to the maximum extent permitted by law, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective by all necessary corporate action, including, as applicable, approval by the board of directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents and each such grant was timely and appropriately communicated to the grant recipient, (iii) each such grant was made in accordance with the terms of the Company Stock Plans and all other applicable laws and regulatory rules or requirements, and (iv) each such grant was properly accounted for in accordance with GAAP in the financial statements (including the related notes) of the Company.

(q) Non-Contravention of Existing Instruments; No Further Authorizations or Approvals Required. The Company and its subsidiary are not (i) in violation of its certificate of incorporation or by-laws or similar organizational documents, (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or its subsidiary is a party or by which the Company or its subsidiary is bound or to which any of the property or assets of the Company or its subsidiary is subject, in each case that is material to the Company and its subsidiary, taken as a whole, or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except in the case of clauses (ii) and (iii) for any such default, event or violation that would not be reasonably expected to have a material adverse effect on the Company and its subsidiary, taken as a whole. The execution and delivery by

the Company of, and the performance by the Company of its obligations under, this Agreement will not contravene any provision of applicable law or the certificate of incorporation or by-laws of the Company, or any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company is a party or by which the Company or its subsidiary is bound or to which any of the property or assets of the Company or its subsidiary is subject, in each case that is material to the Company, or any judgment, order or decree of any governmental body, agency or court having jurisdiction over the Company or its subsidiary, and no consent, approval, authorization or order of, or qualification with, any governmental body or agency is required for the performance by the Company of its obligations under this Agreement, except such as may be required by the securities or Blue Sky laws of the various states or the Financial Industry Regulatory Authority, Inc. ("**FINRA**") in connection with the offer and sale of the Shares.

(r) No Material Actions or Proceedings. There are no legal or governmental proceedings pending or to the knowledge of the Company, threatened to which the Company or its subsidiary is a party or to which any of the properties of the Company or its subsidiary is subject i) other than proceedings accurately described in all material respects in the Registration Statement and the Prospectus and proceedings that would not reasonably be expected to have a material adverse effect on the Company and its subsidiary, taken as a whole, or on the power or ability of the Company to perform its obligations under this Agreement or to consummate the transactions contemplated by the Registration Statement and the Prospectus or ii) that are required to be described in the Registration Statement or the Prospectus and are not so described; and there are no statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement that are not described or filed as required. No material labor dispute with the employees of the Company or its subsidiary exists, except as described in the Registration Statement and the Prospectus, or, to the knowledge of the Company, is imminent; and the Company is not aware of any existing, threatened or imminent labor disturbance by the employees of any of its principal suppliers, manufacturers or contractors that would reasonably be expected to have a material adverse effect on the Company and its subsidiary, taken as a whole.

(s) Marketable Title. The Company and its subsidiary have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by it which is material to the business of the Company or its subsidiary, in each case free and clear of all liens, encumbrances and defects except such as are described in the Registration Statement and the Prospectus or such as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company or its subsidiary; and any real property and buildings held under lease by the Company and its subsidiary are held by the Company or such subsidiary under valid, subsisting and, to the Company's knowledge, enforceable leases with such exceptions as are not material and do not materially interfere with the use made and proposed to be made of such property and buildings by the Company or its subsidiary, in each case except as described in the Registration Statement and the Prospectus.

(t) All Necessary Permits, etc. Except as would not reasonably be expected to have a material adverse effect on the Company and its subsidiary, taken as a whole, the Company and its subsidiary possess all licenses, certificates, permits, clearances, registrations, exemptions and other

authorizations (collectively, "**Permits**") issued by, and has made all declarations, filings, listings, registrations, reports and submissions with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of its properties or the conduct of its businesses as described in the Registration Statement and the Prospectus, or to permit all clinical and pre-clinical studies and trials previously conducted or currently being conducted by or on behalf of the Company or its subsidiary, or that are otherwise required with respect to the product candidates of the Company and its subsidiary, including, without limitation, all necessary U.S. Food and Drug Administration ("**FDA**") and applicable foreign regulatory agency approvals; the Company and its subsidiary are not in violation of, or in default under, any such Permit; all such filings, declarations, listings, registrations, reports or submissions were in material compliance with all applicable laws when filed; no deficiencies regarding compliance with applicable law have been asserted by any applicable regulatory authority with respect to any such filings, declarations, listings, registrations, reports or submissions; and the Company and its subsidiary have not received notice of any revocation or modification of any such Permit and does not have any reason to believe that any such Permit will not be renewed in the ordinary course. The Company and its subsidiary have fulfilled and performed all of their material obligations with respect to such Permits, and, to the Company's knowledge, no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the holder of any such Permit. The Company and its subsidiary (i) is, and at all times has been, in compliance in all material respects with all statutes, rules and regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, storage, import, export or disposal of any of its product candidates or any product manufactured or distributed by the Company or its subsidiary, including, without limitation, requirements governing investigational drugs and devices under the U.S. Federal Food, Drug and Cosmetic Act and rules and regulations thereunder, regulations relating to Good Clinical Practices and Good Laboratory Practices, and the U.S. Animal Welfare Act and rules and regulations thereunder (collectively, "**Applicable Laws**"), and (ii) has not received any FDA Form 483, written notice of adverse finding, warning letter, untitled letter or other correspondence or written notice from any court or arbitrator or governmental or regulatory authority alleging or asserting non-compliance with (A) any Applicable Laws or (B) any Permits required by any such Applicable Laws.

(u) Regulatory Compliance.

(i) To the Company's knowledge, the manufacturing facilities and operations of its suppliers are operated in compliance in all material respects with all applicable statutes, rules, regulations and policies of the FDA and comparable regulatory agencies outside of the United States to which the Company and its subsidiary are subject (collectively, the "**Regulatory Authorities**").

(ii) None of the Company's product candidates have received marketing approval from any Regulatory Authority. All clinical and pre-clinical studies and trials conducted by or on behalf of or sponsored by the Company or its subsidiary, or in which the Company or its subsidiary has participated, with respect to the Company's product candidates, including any such studies and trials that are described in the Registration Statement and the Prospectus, or the results of which are referred to in the Registration Statement and the

Prospectus, as applicable (collectively, "**Company Trials**"), were, and if still pending are, being conducted in all material respects in accordance with all applicable statutes, rules, regulations and policies of the Regulatory Authorities and current Good Clinical Practices and Good Laboratory Practices; the descriptions in the Registration Statement or the Prospectus of the results of any Company Trials are accurate and complete descriptions in all material respects and fairly present the data derived therefrom; the Company has no knowledge of any other studies or trials not described in the Registration Statement and the Prospectus, the results of which are inconsistent with or call into question the results described or referred to in the Registration Statement and the Prospectus; the Company and its subsidiary has operated at all times and is currently in compliance in all material respects with all applicable statutes, rules, regulations and policies of the Regulatory Authorities; the Company and its subsidiary have not received, nor do they have knowledge after due inquiry that any of its collaboration partners has received, any written notices, correspondence or other communications from the Regulatory Authorities or any other governmental agency requiring or threatening the termination, material modification or suspension of Company Trials, other than ordinary course communications with respect to modifications in connection with the design and implementation of such studies or trials, and, to the Company's best knowledge, there are no reasonable grounds for the same. The Company and its subsidiary have obtained (or caused to be obtained) informed consent by or on behalf of each human subject who participated in a Company Trial. In using or disclosing patient information received by the Company or its subsidiary in connection with a Company Trial, the Company and its subsidiary has complied in all material respects with all applicable laws and regulatory rules or requirements, including, without limitation, the Health Insurance Portability and Accountability Act of 1996 and the rules and regulations thereunder. To the Company's knowledge, none of the Company Trials involved any investigator who has been disqualified as a clinical investigator or has been found by the FDA to have engaged in scientific misconduct.

(iii)The Company and its subsidiary have not received any written notices, correspondence or other communications from any Regulatory Authority alleging any violation by the Company or its subsidiary of any Applicable Laws with respect to any of the Company's product candidates.

(v) Tax Law Compliance. The Company and its subsidiary have filed all federal, state, local and foreign tax returns required to be filed or have requested extensions thereof (except where the failure to file would not, individually or in the aggregate, reasonably be expected to have a material adverse effect on the Company and its subsidiary, taken as a whole) and have paid all taxes required to be paid thereon (except for cases in which the failure to pay would not reasonably be expected to have a material adverse effect, or, except as currently being contested in good faith and for which reserves required by GAAP have been created in the financial statements of the Company), and no tax deficiency has been determined adversely to the Company or its subsidiary which has had (nor does the Company have any notice or knowledge of any tax deficiency which would reasonably be expected to be determined adversely to the Company or its subsidiary and which would reasonably be expected to have) a material adverse effect.

(w) Company Not an "Investment Company". The Company is not, and after giving effect to receipt of payment for the Shares and the application of the proceeds thereof as described in the Prospectus will not be, required to register as an "investment company" as such term is defined in the Investment Company Act of 1940, as amended (the "**Investment Company Act**").

(x) Insurance. The Company and its subsidiary are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are reasonably prudent and customary in the businesses in which it is engaged; since January 1, 2012, the Company and its subsidiary have not been refused any insurance coverage sought or applied for; and the Company does not have any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not have a material adverse effect on the Company and its subsidiary, taken as a whole, except as described in the Registration Statement and the Prospectus.

(y) No Price Stabilization or Manipulation. The Company has not taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Shares.

(z) Related Party Transactions. No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers, stockholders or suppliers of the Company, on the other, that is required by the Securities Act to be described in the Registration Statement and the Prospectus and that is not so described in such documents.

(aa) Exchange Act Compliance. Each document, if any, filed or to be filed pursuant to the Exchange Act and incorporated by reference in the Prospectus complied or will comply when so filed in all material respects with the Exchange Act and the applicable rules and regulations of the Commission thereunder and, when read together with the other information in the Prospectus, at the Settlement Dates, will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(bb) No Unlawful Contributions or Other Payments. Neither the Company nor any of its subsidiaries nor, to the Company's knowledge, any director, officer, employee, agent, Affiliate or other person acting on behalf of the Company or any subsidiary has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government officials or employees, political parties or campaigns, political party officials, or candidates for political office from corporate funds; (iii) violated or is in violation of any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "**FCPA**"), or any applicable anti-corruption laws, rules, or regulations of any other jurisdiction in which the Company or any subsidiary conducts business; or (iv) made any other unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment to any person. The Company and its subsidiaries and, to the knowledge of the Company, the Company's affiliates have conducted their respective businesses in compliance with the FCPA and the Company has instituted and maintains policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(cc) Compliance with Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with all applicable financial recordkeeping and reporting requirements, including those of the U.S. Bank Secrecy Act, as amended by Title III of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act), and the applicable anti-money laundering statutes of jurisdictions where the Company and its subsidiaries conduct business, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "**Anti-Money Laundering Laws**"), and no action, suit or proceeding by or before any court or governmental agency, authority, body or any arbitrator involving the Company or any of its subsidiaries with respect to Anti-Money Laundering Laws is pending, or to the knowledge of the Company, threatened.

(dd) Compliance with OFAC.

(i) Neither the Company nor any of its subsidiaries, nor any director, officer or employee thereof, nor to the Company's knowledge, any agent, Affiliate or other person acting on behalf of the Company or any of its subsidiaries, is an individual or entity ("**Covered Person**") that is, or is owned or controlled by a Covered Person that is: (i) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("**OFAC**"), the United Nations Security Council ("**UNSC**"), the European Union ("**EU**"), Her Majesty's Treasury ("**HMT**"), or other relevant sanctions authority (collectively, "**Sanctions**"), nor (ii) located, organized, or resident in a country or territory that is the subject of a U.S. government embargo (including, without limitation, Cuba, Iran, North Korea, Syria and the Crimea).

(ii) The Company will not, directly or indirectly, use the proceeds from this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Covered Person: (i) to fund or facilitate any activities or business of or with any Person that, at the time of such funding or facilitation, is the subject of Sanctions, or in any country or territory that, at the time of such funding or facilitation, is the subject of a U.S. government embargo; or (ii) in any other manner that will result in a violation of Sanctions by any Covered Person (including the Agent).

(iii) For the past five (5) years, the Company and its subsidiaries have not knowingly engaged in, are not now knowingly engaged in, and will not engage in, any direct or indirect dealings or transactions with any Covered Person that at the time of the dealing or transaction is or was the subject of Sanctions or any country or territory that, at the time of the dealing or transaction is or was the subject of a U.S. government embargo.

(ee) Company's Accounting System. The Company and its subsidiary maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with

respect to any differences; and (v) the interactive data in eXtensible Business Reporting Language included in or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as described in the Registration Statement and the Prospectus, since the end of the Company's most recent audited fiscal year, there has been (A) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (B) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

(ff) Disclosure Controls. The Company and its subsidiary maintain an effective system of "disclosure controls and procedures" (as defined in Rule 13a-15(e) of the Exchange Act) that complies with the requirements of the Exchange Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, including controls and procedures designed to ensure that such information is accumulated and communicated to the Company's management as appropriate to allow timely decisions regarding required disclosure. The Company has carried out evaluations of the effectiveness of its disclosure controls and procedures as required by Rule 13a-15 of the Exchange Act.

(gg) Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the "**Sarbanes-Oxley Act**") applicable to the Company as of the date hereof, including Section 402 related to loans and Section 302 and 906 related to certifications.

(hh) Compliance with Environmental Laws. The Company and its subsidiary (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("**Environmental Laws**"), (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) are in compliance with all terms and conditions of any such permit, license or approval, except where such noncompliance with Environmental Laws, failure to receive required permits, licenses or other approvals or failure to comply with the terms and conditions of such permits, licenses or approvals would not, singly or in the aggregate, reasonably be expected to have a material adverse effect on the Company and its subsidiary, taken as a whole. There are no costs or liabilities associated with Environmental Laws (including, without limitation, any capital or operating expenditures required for clean-up, closure of properties or compliance with Environmental Laws or any permit, license or approval, any related constraints on operating activities and any potential liabilities to third parties) which would, singly or in the aggregate, reasonably be expected to have a material adverse effect on the Company and its subsidiary, taken as a whole.

(ii) ERISA. (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("**ERISA**"), for which the Company or any member of its "Controlled Group" (defined as any organization which is a member

of a controlled group of corporations within the meaning of Section 414 of the Code, and, for the avoidance of doubt, when any provision of this Agreement relates to a past event or period of time, such definition shall include an organization that was, as of the time of such past event or period of time, a member of such group) would have any liability (each, a "**Plan**") has been maintained in compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Code, except for noncompliance that would not reasonably be expected to result in a material adverse effect on the Company and its subsidiary, taken as a whole, (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan, excluding transactions effected pursuant to a statutory or administrative exemption, that would reasonably be expected to result in a material adverse effect on the Company and its subsidiary, taken as a whole, (iii) no Plan is subject to Section 412 of the Code or Section 302 of ERISA, (iv) no "reportable event" (within the meaning of Section 4043(c) of ERISA) has occurred or is reasonably expected to occur that either has resulted, or would reasonably be expected to result, in material liability to the Company, (v) neither the Company nor any member of the Controlled Group has incurred, nor reasonably expects to incur, any liability under Title IV of ERISA, and (vi) there is no pending audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other governmental agency or any foreign regulatory agency with respect to any Plan that would reasonably be expected to result in a material adverse effect on the Company and its subsidiary, taken as a whole. None of the following events has occurred or is reasonably likely to occur: (A) a material increase in the aggregate amount of contributions required to be made to all Plans by the Company in the current fiscal year of the Company compared to the amount of such contributions made in the Company's most recently completed fiscal year; or (B) a material increase in the "accumulated post-retirement benefit obligations" (within the meaning of Statement of Financial Accounting Standards 106) of the Company compared to the amount of such obligations in the Company's most recently completed fiscal year.

(jj) Intellectual Property. The Company and its subsidiary own or possess, or can acquire on commercially reasonable terms, valid and enforceable rights to use all inventions, patents, trademarks, service marks, trade names, trade dress, domain names, goodwill associated with the foregoing, copyrights, know-how, trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures (including all registrations and applications for registration of the foregoing, as applicable) (collectively, "**Intellectual Property**") used in or necessary for the conduct of its business as currently conducted or as currently proposed to be conducted. To the Company's knowledge, the conduct of the business of the Company and its subsidiary as currently conducted does not infringe, misappropriate or otherwise violate any Intellectual Property rights of others in any material respect, and to the knowledge of the Company, the conduct of its business as proposed to be conducted will not infringe, misappropriate or otherwise violate any Intellectual Property rights of others in any material respect. Except as described in the Registration Statement and the Prospectus or as would not reasonably be expected, individually or in the aggregate, to have a material adverse effect, there is no pending or, to the Company's knowledge, threatened, action, suit, proceeding or claim by others (i) that the Company or any of its subsidiaries infringes, misappropriates or otherwise violates the Intellectual Property of others, or (ii) challenging the validity, enforceability, scope or ownership of any Intellectual Property owned by or licensed to the Company or its subsidiary or their rights therein. To the knowledge of the Company, no third party has infringed, misappropriated or otherwise violated any

Intellectual Property owned by or exclusively licensed to the Company or its subsidiary in any material respect. None of the Intellectual Property used by the Company or its subsidiary in the conduct of its business has been obtained or is being used by the Company or its subsidiary in material violation of any contractual obligation binding on the Company or any of its subsidiaries. The patents and patent applications relating to brincidofovir and other antivirals, Chimerix Chemical Library and DSTAT described under "Item 1. Business—Our Intellectual Property" in the Company's most recent Annual Report on Form 10-K incorporated by reference in the Registration Statement and the Prospectus, are all solely owned (except with regards to that certain patent family WQ2017024310, which relates to CMX521, and that is jointly owned by the Company) by the Company or exclusively licensed to the Company from the sole owners, subject to the rights of the U.S. federal government as described in the Registration Statement and the Prospectus. The Company is not aware of any specific facts that would support a finding that any of the issued or granted patents owned by or licensed to the Company is invalid or unenforceable and, to the knowledge of the Company, all such issued or granted patents are valid and enforceable. The Company is not subject to any judgment, order, writ, injunction or decree of any court or any federal, state, local, foreign or other governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, or any arbitrator, nor has it entered into or is it a party to any agreement made in settlement of any pending or threatened litigation, which materially restricts or impairs its use of any Intellectual Property. The Company and its subsidiary have taken reasonable steps in accordance with normal industry practice to maintain the confidentiality of all Intellectual Property the value of which to the Company and its subsidiary is contingent upon maintaining the confidentiality thereof, and no such Intellectual Property has been disclosed other than to employees, representatives, independent contractors, collaborators, licensors, licensees, agents and advisors of the Company and its subsidiary, all of whom are bound by written obligations to maintain the confidentiality thereof. All founders, key employees and any other employees involved in the development of Intellectual Property for the Company and its subsidiary have signed confidentiality and invention assignment agreements with the Company pursuant to which the Company either (I) has obtained ownership of and is the exclusive owner of, or (II) has obtained a valid and unrestricted right to exploit, sufficient for the conduct of its business, such Intellectual Property.

(kk) Listing. The Company is subject to and in compliance in all material respects with the reporting requirements of Section 13 or Section 15(d) of the Exchange Act. The Common Shares are registered pursuant to Section 12(b) or Section 12(g) of the Exchange Act and are listed on the Principal Market, and the Company has taken no action designed to, or reasonably likely to have the effect of, terminating the registration of the Common Shares under the Exchange Act or delisting the Common Shares from the Principal Market, nor has the Company received any notification that the Commission or the Principal Market is contemplating terminating such registration or listing.

(ll) Brokers. The Company is not a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or the Agent for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Shares.

(mm) No Outstanding Loans or Other Indebtedness**.** Subsequent to the respective dates as of which information is given in each of the Registration Statement and the Prospectus, x) the Company and its subsidiary have not incurred any material liability or obligation, direct or contingent, nor entered into any material transaction; xi) the Company has not purchased any of its outstanding capital stock, nor declared, paid or otherwise made any dividend or distribution of any kind on its capital stock other than as described in the Registration Statement and the Prospectus; and xii) there has not been any material change in the capital stock, short-term debt or long-term debt of the Company, except in each case as described in each of the Registration Statement and the Prospectus, respectively.

(nn) No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Shares.

(oo) Agent Purchases**.** The Company acknowledges and agrees that the Agent has informed the Company that the Agent may, to the extent permitted under the Securities Act, the Exchange Act and this Agreement, purchase and sell Common Shares for its own account while this Agreement is in effect.

(pp) FINRA Matters. All of the information provided to the Agent or to counsel for the Agent by the Company, its counsel, its officers and directors and the holders of any securities (debt or equity) or options to acquire any securities of the Company in connection with the offering of the Shares is true, complete, correct and compliant with FINRA's rules and any letters, filings or other supplemental information provided to FINRA pursuant to FINRA Rules or NASD Conduct Rules is true, complete and correct. The Company meets the requirements for use of Form S-3 under the Securities Act specified in FINRA Rule 5110(b)(7)(C)(i).

(qq) Compliance with Laws. The Company has not been advised, and has no reason to believe, that it and each of its subsidiaries are not conducting business in compliance with all applicable laws, rules and regulations of the jurisdictions in which it is conducting business, except where failure to be so in compliance would not result in a Material Adverse Change.

(rr) Cybersecurity. The Company and its subsidiaries' information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, "**IT Systems**") are adequate for, and operate and perform in all material respects as required in connection with the operation of the business of the Company and its subsidiaries as currently conducted, free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company and its subsidiaries have implemented and maintained commercially reasonable physical, technical and administrative controls, policies, procedures, and safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data, including "Personal Data," used in connection with their businesses. "**Personal Data**" means (i) a natural person's name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver's license number, passport number, credit card number, bank information, or customer or account number; (ii) any information which would qualify as "personally identifying information" under the Federal Trade Commission Act, as amended; (iii) "personal data" as defined by GDPR (as defined below); (iv) any information which would qualify as "protected health information" under the Health Insurance Portability and

Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act (collectively, "**HIPAA"**); and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person's health or sexual orientation. To the Company's knowledge, there have been no breaches, violations, outages or unauthorized uses of or accesses to same, except for those that have been remedied without material cost or liability or the duty to notify any other person, nor any incidents under internal review or investigations relating to the same. The Company and its subsidiaries are presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Personal Data and to the protection of such IT Systems and Personal Data from unauthorized use, access, misappropriation or modification.

(ss) Compliance with Data Privacy Laws. The Company and its subsidiaries are, and at all prior times were, in material compliance with all applicable state and federal data privacy and security laws and regulations, including without limitation HIPAA, and the Company and its subsidiaries have taken commercially reasonable actions to prepare to comply with, and since May 25, 2018, have been and currently are in compliance with, the European Union General Data Protection Regulation ("**GDPR**") (EU 2016/679) (collectively, the "**Privacy Laws**"). To ensure compliance with the Privacy Laws, the Company and its subsidiaries have in place, comply with, and take appropriate steps reasonably designed to ensure compliance in all material respects with their policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis of Personal Data (the "**Policies**"). The Company and its subsidiaries have at all times made all disclosures to users or customers required by applicable laws and regulatory rules or requirements, and none of such disclosures made or contained in any Policy have, to the knowledge of the Company, been inaccurate or in violation of any applicable laws and regulatory rules or requirements in any material respect. The Company further certifies that neither it nor any subsidiary: (i) has received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposes any obligation or liability under any Privacy Law.

(tt) Forward Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a "**Forward-Looking Statement**") contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(uu) Other Underwriting Agreements. The Company is not a party to any agreement with an agent or underwriter for any other "at the market" or continuous equity transaction.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent in connection with this Agreement shall be deemed to be a representation and warranty by the Company to the Agent as to the matters set forth therein.

The Company acknowledges that the Agent and, for purposes of the opinions to be delivered pursuant to Section 4(o) hereof, counsel to the Company and counsel to the Agent, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

Section 3. ISSUANCE AND SALE OF COMMON SHARES

(a) Sale of Securities. On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company and the Agent agree that the Company may from time to time seek to sell Shares through the Agent, acting as sales agent, or directly to the Agent, acting as principal, as follows, with an aggregate Sales Price of up to the Maximum Program Amount, based on and in accordance with Issuance Notices as the Company may deliver, during the Agency Period.

(b) Mechanics of Issuances.

(i) Issuance Notice. Upon the terms and subject to the conditions set forth herein, on any Trading Day during the Agency Period on which the conditions set forth in Section 5(a) and Section 5(b) shall have been satisfied, the Company may exercise its right to request an issuance of Shares by delivering to the Agent an Issuance Notice; *provided, however*, that (A) in no event may the Company deliver an Issuance Notice to the extent that the sum of (x) the aggregate Sales Price of the requested Issuance Amount, plus (y) the aggregate Sales Price of all Shares issued under all previous Issuance Notices effected pursuant to this Agreement, would exceed the Maximum Program Amount; and (B) prior to delivery of any Issuance Notice, the period set forth for any previous Issuance Notice shall have expired or been terminated. An Issuance Notice shall be considered delivered on the Trading Day that it is received by e‑mail to the persons set forth in Schedule A hereto and confirmed by the Company by telephone (including a voicemail message to the persons so identified), with the understanding that, with adequate prior written notice, the Agent may modify the list of such persons from time to time.

(ii) Agent Efforts. Upon the terms and subject to the conditions set forth in this Agreement, upon the receipt of an Issuance Notice, the Agent will use its commercially reasonable efforts consistent with its normal sales and trading practices to place the Shares with respect to which the Agent has agreed to act as sales agent, subject to, and in accordance with the information specified in, the Issuance Notice, unless the sale of the Shares described therein has been suspended, cancelled or otherwise terminated in accordance with the terms of this Agreement. For the avoidance of doubt, the parties to this Agreement may modify an Issuance Notice at any time provided they both agree in writing to any such modification.

(iii) Method of Offer and Sale. The Shares may be offered and sold (A) in privately negotiated transactions with the consent of the Company; (B) as block transactions; or (C) by any other method permitted by law deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act, including sales made directly on the Principal Market or sales made into any other existing trading market of the Common Shares. Nothing in this Agreement shall be deemed to require either party to agree to the method of offer and sale specified in the preceding sentence, and (except as

specified in clauses (A) and (B) above) the method of placement of any Shares by the Agent shall be at the Agent's discretion.

(iv) Confirmation to the Company. If acting as sales agent hereunder, the Agent will provide written confirmation to the Company no later than the opening of the Trading Day next following the Trading Day on which it has placed Shares hereunder setting forth the number of shares sold on such Trading Day, the corresponding Sales Price and the Issuance Price payable to the Company in respect thereof.

(v) Settlement. Each issuance of Shares will be settled on the applicable Settlement Date for such issuance of Shares and, subject to the provisions of Section 5, on or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Shares being sold by crediting the Agent or its designee's account at The Depository Trust Company through its Deposit/Withdrawal At Custodian (DWAC) System, or by such other means of delivery as may be mutually agreed upon by the parties hereto and, upon receipt of such Shares, which in all cases shall be freely tradable, transferable, registered shares in good deliverable form, the Agent will deliver, by wire transfer of immediately available funds, the related Issuance Price in same day funds delivered to an account designated by the Company prior to the Settlement Date. The Company may sell Shares to the Agent as principal at a price agreed upon at each relevant time Shares are sold pursuant to this Agreement (each, a "**Time of Sale**").

(vi) Suspension or Termination of Sales. Consistent with standard market settlement practices, the Company or the Agent may, upon notice to the other party hereto in writing or by telephone (confirmed immediately by verifiable email), suspend any sale of Shares, and the period set forth in an Issuance Notice shall immediately terminate; *provided*, *however*, that (A) such suspension and termination shall not affect or impair either party's obligations with respect to any Shares placed or sold hereunder prior to the receipt of such notice; (B) if the Company suspends or terminates any sale of Shares after the Agent confirms such sale to the Company, the Company shall still be obligated to comply with Section 3(b)(v) with respect to such Shares; and (C) if the Company defaults in its obligation to deliver Shares on a Settlement Date, the Company agrees that it will hold the Agent harmless against any loss, claim, damage or expense (including, without limitation, penalties, interest and reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company. The parties hereto acknowledge and agree that, in performing its obligations under this Agreement, the Agent may borrow Common Shares from stock lenders in the event that the Company has not delivered Shares to settle sales as required by subsection (v) above, and may use the Shares to settle or close out such borrowings. The Company agrees that no such notice shall be effective against the Agent unless it is made to the persons identified in writing by the Agent pursuant to Section 3(b)(i).

(vii) No Guarantee of Placement, Etc. The Company acknowledges and agrees that (A) there can be no assurance that the Agent will be successful in placing Shares; (B) the Agent will incur no liability or obligation to the Company or any other Person if it does not sell Shares; and (C) the Agent shall be under no obligation to purchase Shares on a

principal basis pursuant to this Agreement, except as otherwise specifically agreed by the Agent and the Company.

(viii) Material Non-Public Information. Notwithstanding any other provision of this Agreement, the Company and the Agent agree that the Company shall not deliver any Issuance Notice to the Agent, and the Agent shall not be obligated to place any Shares, during any period in which the Company is in possession of material non-public information.

(c) Fees. As compensation for services rendered, the Company shall pay to the Agent, on the applicable Settlement Date, the Selling Commission for the applicable Issuance Amount (including with respect to any suspended or terminated sale pursuant to Section 3(b)(vi)) by the Agent deducting the Selling Commission from the applicable Issuance Amount.

(d) Expenses. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations hereunder and in connection with the transactions contemplated hereby, including without limitation (i) all expenses incident to the issuance and delivery of the Shares (including all printing and engraving costs); (ii) all fees and expenses of the registrar and transfer agent of the Shares; (iii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Shares; (iv) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors; (v) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration Statement (including financial statements, exhibits, schedules, consents and certificates of experts), the Prospectus, any Free Writing Prospectus (as defined below) prepared by or on behalf of, used by, or referred to by the Company, and all amendments and supplements thereto, and this Agreement; (vi) all filing fees, attorneys' fees and expenses incurred by the Company or the Agent in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Shares for offer and sale under the state securities or blue sky laws or the provincial securities laws of Canada, and, if requested by the Agent, preparing and printing a "**Blue Sky Survey**" or memorandum and a "Canadian wrapper," and any supplements thereto, advising the Agent of such qualifications, registrations, determinations and exemptions; (vii) the reasonable fees and disbursements of the Agent's counsel, including the reasonable fees and expenses of counsel for the Agent in connection with, FINRA review, if any, and approval of the Agent's participation in the offering and distribution of the Shares; (viii) the filing fees incident to FINRA review, if any; (ix) all fees, expenses and disbursements relating to background checks of the Company's directors, director nominees and executive officers; (x) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the offering of the Shares, including, without limitation, expenses associated with the preparation or dissemination of any electronic road show, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants engaged in connection with the road show presentations with the prior approval of the Company, travel and lodging expenses of the representatives, employees and officers of the Company and of the Agent and any such consultants, and the cost of any aircraft chartered in connection with the road show; and (xi) the fees and expenses associated with listing the Shares on the Principal Market. The fees and disbursements of Agent's counsel pursuant to subsections (vi) and (vii) above shall not exceed (A) $50,000 in

connection with the entry into this Agreement and (B) $15,000 in connection with each Triggering Event Date (as defined below) on which the Company is required to provide a certificate pursuant to Section 4(o).

Section 4. ADDITIONAL COVENANTS

The Company covenants and agrees with the Agent as follows, in addition to any other covenants and agreements made elsewhere in this Agreement:

(a) Exchange Act Compliance. During the Agency Period, the Company shall (i) file, on a timely basis, with the Commission all reports and documents required to be filed under Section 13, 14 or 15 of the Exchange Act in the manner and within the time periods required by the Exchange Act; and (ii) either (A) include in its quarterly reports on Form 10-Q and its annual reports on Form 10-K, a summary detailing, for the relevant reporting period, (1) the number of Shares sold through the Agent pursuant to this Agreement and (2) the net proceeds received by the Company from such sales or, in the Company's sole discretion, (B) prepare a prospectus supplement containing, or include in such other filing permitted by the Securities Act or Exchange Act (each an "**Interim Prospectus Supplement")**, such summary information and, at least once a quarter and subject to this Section 4, file such Interim Prospectus Supplement pursuant to Rule 424(b) under the Securities Act (and within the time periods required by Rule 424(b) and Rule 430B under the Securities Act).

(b) Securities Act Compliance. After the date of this Agreement, the Company shall promptly advise the Agent in writing (i) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission; (ii) of the time and date of any filing of any post-effective amendment to the Registration Statement, any Rule 462(b) Registration Statement or any amendment or supplement to the Prospectus, or any Free Writing Prospectus; (iii) of the time and date that any post-effective amendment to the Registration Statement or any Rule 462(b) Registration Statement becomes effective; and (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto, any Rule 462(b) Registration Statement or any amendment or supplement to the Prospectus or of any order preventing or suspending the use of any Free Writing Prospectus or the Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Common Shares from any securities exchange upon which they are listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time, the Company will use its best efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees that it shall comply with the provisions of Rule 424(b) and Rule 433, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under such Rule 424(b) or Rule 433 were received in a timely manner by the Commission.

(c) Amendments and Supplements to the Prospectus and Other Securities Act Matters. If any event shall occur or condition exist as a result of which it is necessary to amend or supplement the Prospectus so that the Prospectus does not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered to a purchaser, not misleading, or if in the

opinion of the Agent or counsel for the Agent it is otherwise necessary to amend or supplement the Prospectus to comply with applicable law, including the Securities Act, the Company agrees (subject to Section 4(d) and 4(f)) to promptly prepare, file with the Commission and furnish at its own expense to the Agent, amendments or supplements to the Prospectus so that the statements in the Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances when the Prospectus is delivered to a purchaser, be misleading or so that the Prospectus, as amended or supplemented, will comply with applicable law including the Securities Act. Neither the Agent's consent to, or delivery of, any such amendment or supplement shall constitute a waiver of any of the Company's obligations under Sections 4(d) and 4(f).

(d) Agent's Review of Proposed Amendments and Supplements. Prior to amending or supplementing the Registration Statement (including any registration statement filed under Rule 462(b) under the Securities Act) or the Prospectus (excluding any amendment or supplement through incorporation of any report filed under the Exchange Act), insofar as such proposed amendment or supplement relates to the Shares, the Company shall furnish to the Agent for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each such proposed amendment or supplement, and the Company shall not file or use any such proposed amendment or supplement without the Agent's prior consent, and the Company shall file with the Commission within the applicable period specified in Rule 424(b) under the Securities Act any prospectus required to be filed pursuant to such Rule.

(e) Use of Free Writing Prospectus. Neither the Company nor the Agent has prepared, used, referred to or distributed, or will prepare, use, refer to or distribute, without the other party's prior written consent, any "written communication" that constitutes a "free writing prospectus" as such terms are defined in Rule 405 under the Securities Act with respect to the offering contemplated by this Agreement (any such free writing prospectus being referred to herein as a "**Free Writing Prospectus**").

(f) Free Writing Prospectuses. The Company shall furnish to the Agent for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of each proposed free writing prospectus or any amendment or supplement thereto to be prepared by or on behalf of, used by, or referred to by the Company and the Company shall not file, use or refer to any proposed free writing prospectus or any amendment or supplement thereto without the Agent's consent. The Company shall furnish to the Agent, without charge, as many copies of any free writing prospectus prepared by or on behalf of, or used by the Company, as the Agent may reasonably request. If at any time when a prospectus is required by the Securities Act (including, without limitation, pursuant to Rule 173(d)) to be delivered in connection with sales of the Shares (but in any event if at any time through and including the date of this Agreement) there occurred or occurs an event or development as a result of which any free writing prospectus prepared by or on behalf of, used by, or referred to by the Company conflicted or would conflict with the information contained in the Registration Statement or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at that subsequent time, not misleading, the Company shall promptly amend or supplement such free writing prospectus to eliminate or correct such conflict or so that the statements in such free writing prospectus as so

amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such subsequent time, not misleading, as the case may be; *provided, however*, that prior to amending or supplementing any such free writing prospectus, the Company shall furnish to the Agent for review, a reasonable amount of time prior to the proposed time of filing or use thereof, a copy of such proposed amended or supplemented free writing prospectus and the Company shall not file, use or refer to any such amended or supplemented free writing prospectus without the Agent's consent.

(g) Filing of Agent Free Writing Prospectuses. The Company shall not take any action that would result in the Agent or the Company being required to file with the Commission pursuant to Rule 433(d) under the Securities Act a free writing prospectus prepared by or on behalf of the Agent that the Agent otherwise would not have been required to file thereunder.

(h) Copies of Registration Statement and Prospectus. After the date of this Agreement through the last time that a prospectus is required by the Securities Act (including, without limitation, pursuant to Rule 173(d)) to be delivered in connection with sales of the Shares, the Company agrees to furnish the Agent with copies (which may be electronic copies) of the Registration Statement and each amendment thereto, and with copies of the Prospectus and each amendment or supplement thereto in the form in which it is filed with the Commission pursuant to the Securities Act or Rule 424(b) under the Securities Act, both in such quantities as the Agent may reasonably request from time to time; and, if the delivery of a prospectus is required under the Securities Act or under the blue sky or securities laws of any jurisdiction at any time on or prior to the applicable Settlement Date for any period set forth in an Issuance Notice in connection with the offering or sale of the Shares and if at such time any event has occurred as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made when such Prospectus is delivered, not misleading, or, if for any other reason it is necessary during such same period to amend or supplement the Prospectus or to file under the Exchange Act any document incorporated by reference in the Prospectus in order to comply with the Securities Act or the Exchange Act, to notify the Agent and to request that the Agent suspend offers to sell Shares (and, if so notified, the Agent shall cease such offers as soon as practicable); and if the Company decides to amend or supplement the Registration Statement or the Prospectus as then amended or supplemented, to advise the Agent promptly by telephone (with confirmation in writing) and to prepare and cause to be filed promptly with the Commission an amendment or supplement to the Registration Statement or the Prospectus as then amended or supplemented that will correct such statement or omission or effect such compliance; provided, however, that if during such same period the Agent is required to deliver a prospectus in respect of transactions in the Shares, the Company shall promptly prepare and file with the Commission such an amendment or supplement.

(i) Blue Sky Compliance. The Company shall cooperate with the Agent and counsel for the Agent to qualify or register the Shares for sale under (or obtain exemptions from the application of) the state securities or blue sky laws or Canadian provincial securities laws of those jurisdictions designated by the Agent, shall comply with such laws and shall continue such qualifications, registrations and exemptions in effect so long as required for the distribution of the Shares. The

Company shall not be required to qualify as a foreign corporation or to take any action that would subject it to general service of process in any such jurisdiction where it is not presently qualified or where it would be subject to taxation as a foreign corporation. The Company will advise the Agent promptly of the suspension of the qualification or registration of (or any such exemption relating to) the Shares for offering, sale or trading in any jurisdiction or any initiation or threat of any proceeding for any such purpose, and in the event of the issuance of any order suspending such qualification, registration or exemption, the Company shall use its best efforts to obtain the withdrawal thereof at the earliest possible moment.

(j) Earnings Statement. As soon as practicable, the Company will make generally available to its security holders and to the Agent an earnings statement (which need not be audited) covering a period of at least twelve months beginning with the first fiscal quarter of the Company occurring after the date of this Agreement which shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 under the Securities Act; *provided* that the Company will be deemed to have furnished such statement to its security holders and the Agent to the extent such statement is filed with Commission on EDGAR or any successor system.

(k) Listing; Reservation of Shares. (a) The Company will maintain the listing of the Shares on the Principal Market; and (b) the Company will reserve and keep available at all times, free of preemptive rights, Shares for the purpose of enabling the Company to satisfy its obligations under this Agreement.

(l) Transfer Agent. The Company shall engage and maintain, at its expense, a registrar and transfer agent for the Shares.

(m) Due Diligence. During the term of this Agreement, the Company will reasonably cooperate with any reasonable due diligence review conducted by the Agent in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during normal business hours and at the Company's principal offices, as the Agent may reasonably request from time to time.

(n) Representations and Warranties. The Company acknowledges that each delivery of an Issuance Notice and each delivery of Shares on a Settlement Date shall be deemed to be (i) an affirmation to the Agent that the representations and warranties of the Company contained in or made pursuant to this Agreement are true and correct as of the date of such Issuance Notice or of such Settlement Date, as the case may be, as though made at and as of each such date, except as may be disclosed in the Prospectus (including any documents incorporated by reference therein and any supplements thereto); and (ii) an undertaking that the Company will advise the Agent if any of such representations and warranties will not be true and correct as of the Settlement Date for the Shares relating to such Issuance Notice, as though made at and as of each such date (except that such representations and warranties shall be deemed to relate to the Registration Statement and the Prospectus as amended and supplemented relating to such Shares).

(o) Deliverables at Triggering Event Dates; Certificates. The Company agrees that on or prior to the date of the first Issuance Notice and, during the term of this Agreement after the date of the first Issuance Notice, upon:

(A) the filing of the Prospectus or the amendment or supplement of any Registration Statement or Prospectus (other than a prospectus supplement relating solely to an offering of securities other than the Shares or a prospectus filed pursuant to Section 4(a)(ii)(B)), by means of a post-effective amendment, sticker or supplement, but not by means of incorporation of documents by reference into the Registration Statement or Prospectus;

(B) the filing with the Commission of an annual report on Form 10-K or a quarterly report on Form 10-Q (including any Form 10-K/A or Form 10-Q/A containing amended financial information or a material amendment to the previously filed annual report on Form 10-K or quarterly report on Form 10-Q), in each case, of the Company; or

(C) the filing with the Commission of a current report on Form 8-K of the Company containing amended financial information (other than information "furnished" pursuant to Item 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) that is material to the offering of securities of the Company in the Agent's reasonable discretion;

(any such event, a "**Triggering Event Date**"), the Company shall furnish the Agent (but in the case of clause (C) above only if the Agent reasonably determines that the information contained in such current report on Form 8-K of the Company is material) with a certificate as of the Triggering Event Date, in the form and substance satisfactory to the Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel, modified, as necessary, to relate to the Registration Statement and the Prospectus as amended or supplemented, (A) confirming that the representations and warranties of the Company contained in this Agreement are true and correct, (B) that the Company has performed all of its obligations hereunder to be performed on or prior to the date of such certificate and as to the matters set forth in Section 5(a)(iii) hereof, and (C) containing any other certification that the Agent shall reasonably request. The requirement to provide a certificate under this Section 4(o) shall be waived for any Triggering Event Date occurring at a time when no Issuance Notice is pending or a suspension is in effect, which waiver shall continue until the earlier to occur of the date the Company delivers instructions for the sale of Shares hereunder (which for such calendar quarter shall be considered a Triggering Event Date) and the next occurring Triggering Event Date. Notwithstanding the foregoing, if the Company subsequently decides to sell Shares following a Triggering Event Date when a suspension was in effect and did not provide the Agent with a certificate under this Section 4(o), then before the Company delivers the instructions for the sale of Shares or the Agent sells any Shares pursuant to such instructions, the Company shall provide the Agent with a certificate in conformity with this Section 4(o) dated as of the date that the instructions for the sale of Shares are issued.

(p) Legal Opinions. On or prior to the date of the first Issuance Notice and on or prior to each Triggering Event Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 4(o) for which no waiver is applicable and excluding the date of this Agreement, a negative assurances letter and the written legal opinion of Cooley LLP, counsel to the Company, Latham & Watkins LLP, counsel to the Agent and Fenwick & West LLP, intellectual property counsel to the Company, each dated the date of delivery, in form and substance reasonably satisfactory to Agent and its counsel, substantially similar to the form previously provided to the

Agent and its counsel, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented. In lieu of such opinions for subsequent periodic filings, in the discretion of the Agent, the Company may furnish a reliance letter from such counsel to the Agent, permitting the Agent to rely on a previously delivered opinion letter, modified as appropriate for any passage of time or Triggering Event Date (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of such Triggering Event Date).

(q) Comfort Letter. On or prior to the date of the first Issuance Notice and on or prior to each Triggering Event Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 4(o) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause Ernst & Young LLP, the independent registered public accounting firm who has audited the financial statements included or incorporated by reference in the Registration Statement, to furnish the Agent a comfort letter, dated the date of delivery, in form and substance reasonably satisfactory to the Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel; provided, however, that any such comfort letter will only be required on the Triggering Event Date specified to the extent that it contains financial statements filed with the Commission under the Exchange Act and incorporated or deemed to be incorporated by reference into a Prospectus. If requested by the Agent, the Company shall also cause a comfort letter to be furnished to the Agent within ten (10) Trading Days of the date of occurrence of any material transaction or event requiring the filing of a current report on Form 8-K containing material amended financial information of the Company, including the restatement of the Company's financial statements. The Company shall be required to furnish no more than one comfort letter hereunder per calendar quarter.

(r) Secretary's Certificate. On or prior to the date of the first Issuance Notice and on or prior to each Triggering Event Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 4(o) for which no waiver is applicable and excluding the date of this Agreement, the Company shall furnish the Agent a certificate executed by the Secretary of the Company, signing in such capacity, dated the date of delivery (i) certifying that attached thereto are true and complete copies of the resolutions duly adopted by the Board of Directors of the Company authorizing the execution and delivery of this Agreement and the consummation of the transactions contemplated hereby (including, without limitation, the issuance of the Shares pursuant to this Agreement), which authorization shall be in full force and effect on and as of the date of such certificate, (ii) certifying and attesting to the office, incumbency, due authority and specimen signatures of each Person who executed this Agreement for or on behalf of the Company, and (iii) containing any other certification that the Agent shall reasonably request.

(s) Agent's Own Account; Clients' Account. The Company consents to the Agent trading, in compliance with applicable law, in the Common Shares for the Agent's own account and for the account of its clients at the same time as sales of the Shares occur pursuant to this Agreement.

(t) Investment Limitation. The Company shall not invest, or otherwise use the proceeds received by the Company from its sale of the Shares in such a manner as would require the

Company or any of its subsidiaries to register as an investment company under the Investment Company Act.

(u) Market Activities. The Company will not take, directly or indirectly, any action designed to or that might be reasonably expected to cause or result in stabilization or manipulation of the price of the Shares or any other reference security, whether to facilitate the sale or resale of the Shares or otherwise, and the Company will, and shall cause each of its Affiliates to, comply with all applicable provisions of Regulation M under the Exchange Act ("**Regulation M**"). If the limitations of Rule 102 of Regulation M ("**Rule 102**") do not apply with respect to the Shares or any other reference security pursuant to any exception set forth in Section (d) of Rule 102, then promptly upon notice from the Agent (or, if later, at the time stated in the notice), the Company will, and shall cause each of its Affiliates to, comply with Rule 102 as though such exception were not available but the other provisions of Rule 102 (as interpreted by the Commission) did apply. The Company shall promptly notify the Agent if it no longer meets the requirements set forth in Section (d) of Rule 102.

(v) Notice of Other Sale. Without the written consent of the Agent, the Company will not, directly or indirectly, (i) offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Shares or securities convertible into or exchangeable for Common Shares (other than Shares hereunder), warrants or any rights to purchase or acquire Common Shares, (ii) effect a reverse stock split, recapitalization, share consolidation, reclassification or similar transaction affecting the outstanding Common Shares, Shares; (iii) submit or file any registration statement under the Securities Act in respect of any Common Shares (other than as contemplated by this Agreement with respect to the Shares), or (iv) publicly announce the intention of doing any of the foregoing, during the period beginning on the third Trading Day immediately prior to the date on which any Issuance Notice is delivered to the Agent hereunder and ending on the third Trading Day immediately following the Settlement Date with respect to Shares sold pursuant to such Issuance Notice; and will not directly or indirectly enter into any other "at the market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Shares (other than the Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Shares, warrants or any rights to purchase or acquire, Common Shares prior to the termination of this Agreement; provided, however, that such restrictions will not be required in connection with the Company's (i) issuance or sale of Common Shares, options to purchase Common Shares or Common Shares issuable upon the exercise of options or other equity awards pursuant to any employee or director share option, incentive or benefit plan, share purchase or ownership plan, long-term incentive plan, dividend reinvestment plan, inducement award under the Principal Market rules or other compensation plan of the Company or its subsidiaries, as in effect on the date of this Agreement, (ii) issuance or sale of Common Shares issuable upon exchange, conversion or redemption of securities or the exercise or vesting of warrants, options or other equity awards outstanding at the date of this Agreement, and (iii) modification of any outstanding options, warrants of any rights to purchase or acquire Common Shares.

Section 5. CONDITIONS TO DELIVERY OF ISSUANCE NOTICES AND TO SETTLEMENT

(a) Conditions Precedent to the Right of the Company to Deliver an Issuance Notice and the Obligation of the Agent to Sell Shares. The right of the Company to deliver an Issuance Notice hereunder is subject to the satisfaction, on the date of delivery of such Issuance Notice, and the obligation of the Agent to use its commercially reasonable efforts to place Shares during the applicable period set forth in the Issuance Notice is subject to the satisfaction, on each Trading Day during the applicable period set forth in the Issuance Notice, of each of the following conditions:

(i) Accuracy of the Company's Representations and Warranties; Performance by the Company. The Company shall have delivered the certificate required to be delivered pursuant to Section 4(o) on or before the date on which delivery of such certificate is required pursuant to Section 4(o). The Company shall have performed, satisfied and complied with all covenants, agreements and conditions required by this Agreement to be performed, satisfied or complied with by the Company at or prior to such date, including, but not limited to, the covenants contained in Section 4(p), Section 4(q) and Section 4(r).

(ii) No Injunction. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction or any self-regulatory organization having authority over the matters contemplated hereby that prohibits or directly and materially adversely affects any of the transactions contemplated by this Agreement, and no proceeding shall have been commenced that may have the effect of prohibiting or materially adversely affecting any of the transactions contemplated by this Agreement.

(iii) Material Adverse Changes. Except as disclosed in the Prospectus and the Time of Sale Information, (a) in the judgment of the Agent there shall not have occurred any Material Adverse Change; and (b) there shall not have occurred any downgrading, nor shall any notice have been given of any intended or potential downgrading or of any review for a possible change that does not indicate the direction of the possible change, in the rating accorded any securities of the Company or any of its subsidiaries by any "nationally recognized statistical rating organization" as such term is defined for purposes of Section 3(a)(62) of the Exchange Act.

(iv) No Suspension of Trading in or Delisting of Common Shares; Other Events. The trading of the Common Shares (including without limitation the Shares) shall not have been suspended by the Commission, the Principal Market or FINRA and the Common Shares (including without limitation the Shares) shall have been approved for listing or quotation on and shall not have been delisted from the Nasdaq Stock Market, the New York Stock Exchange or any of their constituent markets. There shall not have occurred (and be continuing in the case of occurrences under clauses (i) and (ii) below) any of the following: (i) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by the Principal Market or trading in securities generally on the Principal Market shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges by the Commission or the FINRA; (ii) a general banking moratorium shall have been declared by any of federal or

New York, authorities; or (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States' or international political, financial or economic conditions, as in the judgment of the Agent is material and adverse and makes it impracticable to market the Shares in the manner and on the terms described in the Prospectus or to enforce contracts for the sale of securities.

(b) Documents Required to be Delivered on each Issuance Notice Date. The Agent's obligation to use its commercially reasonable efforts to place Shares hereunder shall additionally be conditioned upon the delivery to the Agent on or before the Issuance Notice Date of a certificate in form and substance reasonably satisfactory to the Agent, executed by the Chief Executive Officer, President, Chief Financial Officer or General Counsel of the Company, to the effect that all conditions to the delivery of such Issuance Notice shall have been satisfied as at the date of such certificate (which certificate shall not be required if the foregoing representations shall be set forth in the Issuance Notice).

(c) No Misstatement or Material Omission. Agent shall not have advised the Company that the Registration Statement, the Prospectus or the Time of Sale Information, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent's reasonable opinion is material, or omits to state a fact that in the Agent's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

Section 6. INDEMNIFICATION AND CONTRIBUTION

(a) Indemnification of the Agent. The Company agrees to indemnify and hold harmless the Agent, its officers and employees, and each person, if any, who controls the Agent within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which the Agent or such officer, employee or controlling person may become subject, under the Securities Act, the Exchange Act, other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Shares have been offered or sold or at common law or otherwise (including in settlement of any litigation), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact contained in any Free Writing Prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, and to reimburse the Agent and each such officer, employee and controlling person for any and all expenses (including the reasonable and documented fees and disbursements of counsel chosen by the Agent) as such expenses are reasonably incurred by the Agent or such officer, employee or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; provided, however, that the

foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement, any such Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information furnished by the Agent to the Company consists of the information set forth in Section 6(b) below. The indemnity agreement set forth in this Section 6(a) shall be in addition to any liabilities that the Company may otherwise have.

(b) Indemnification of the Company, its Directors and Officers. The Agent agrees to indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act against any loss, claim, damage, liability or expense, as incurred, to which the Company or any such director, officer or controlling person may become subject, under the Securities Act, the Exchange Act, or other federal or state statutory law or regulation, or the laws or regulations of foreign jurisdictions where Shares have been offered or sold or at common law or otherwise (including in settlement of any litigation), arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, or any amendment thereto, including any information deemed to be a part thereof pursuant to Rule 430B under the Securities Act, or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) any untrue statement or alleged untrue statement of a material fact contained in any Free Writing Prospectus that the Company has used, referred to or filed, or is required to file, pursuant to Rule 433(d) of the Securities Act or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; but only to the extent arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement, any such Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information furnished by the Agent to the Company consists of the information set forth in the first sentence of the ninth paragraph under the caption “Plan of Distribution” in the Prospectus, and to reimburse the Company and each such director, officer and controlling person for any and all expenses (including the reasonable and documented fees and disbursements of counsel chosen by the Company) as such expenses are reasonably incurred by the Company or such officer, director or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The indemnity agreement set forth in this Section 6(b) shall be in addition to any liabilities that the Agent or the Company may otherwise have.

(c) Notifications and Other Indemnification Procedures. Promptly after receipt by an indemnified party under this Section 6 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 6, notify the indemnifying party in writing of the commencement thereof, but the omission to so notify the indemnifying party will not relieve it from any liability which it may have

to any indemnified party for contribution or otherwise than under the indemnity agreement contained in this Section 6 or to the extent it is not prejudiced as a proximate result of such failure. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; provided, however, if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of such indemnifying party's election so to assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 6 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the fees and expenses of more than one separate counsel (together with local counsel), representing the indemnified parties who are parties to such action), which counsel (together with any local counsel) for the indemnified parties shall be selected by the Agent (in the case of counsel for the indemnified parties referred to in Section 6(a) above), (ii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action or (iii) the indemnifying party has authorized in writing the employment of counsel for the indemnified party at the expense of the indemnifying party, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party and shall be paid as they are incurred.

(d) Settlements. The indemnifying party under this Section 6 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 6(c) hereof, the indemnifying party agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 30 days after receipt by such indemnifying party of the aforesaid request; and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent includes an

unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding.

(e) Contribution. If the indemnification provided for in this Section 6 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Agent, on the other hand, from the offering of the Shares pursuant to this Agreement; or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, in connection with the statements or omissions which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Agent, on the other hand, in connection with the offering of the Shares pursuant to this Agreement shall be deemed to be in the same respective proportions as the total gross proceeds from the offering of the Shares (before deducting expenses) received by the Company bear to the total commissions received by the Agent. The relative fault of the Company, on the one hand, and the Agent, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company, on the one hand, or the Agent, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 6(c), any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 6(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 6(e); *provided*, *however*, that no additional notice shall be required with respect to any action for which notice has been given under Section 6(c) for purposes of indemnification.

The Company and the Agent agree that it would not be just and equitable if contribution pursuant to this Section 6(e) were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 6(e).

Notwithstanding the provisions of this Section 6(e), the Agent shall not be required to contribute any amount in excess of the agent fees received by the Agent in connection with the offering contemplated hereby. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 6(e), each officer and employee of the Agent and each person, if any, who controls the Agent within the meaning of the Securities Act or the Exchange Act shall have the same rights to contribution as the Agent, and each director of the Company, each officer of the Company who signed the Registration

Statement, and each person, if any, who controls the Company within the meaning of the Securities Act and the Exchange Act shall have the same rights to contribution as the Company.

Section 7. TERMINATION & SURVIVAL

(a) Term. Subject to the provisions of this Section 7, the term of this Agreement shall continue from the date of this Agreement until the end of the Agency Period, unless earlier terminated by the parties to this Agreement pursuant to this Section 7.

(b) Termination; Survival Following Termination.

(i) Either party may terminate this Agreement prior to the end of the Agency Period, by giving written notice as required by this Agreement, upon ten (10) Trading Days' notice to the other party; provided that, (A) if the Company terminates this Agreement after the Agent confirms to the Company any sale of Shares, the Company shall remain obligated to comply with Section 3(b)(v) with respect to such Shares and (B) Section 2, Section 6, Section 7 and Section 8 shall survive termination of this Agreement. If termination shall occur prior to the Settlement Date for any sale of Shares, such sale shall nevertheless settle in accordance with the terms of this Agreement.

(ii) In addition to the survival provision of Section 7(b)(i), the respective indemnities, agreements, representations, warranties and other statements of the Company, of its officers and of the Agent set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of the Agent or the Company or any of its or their partners, officers or directors or any controlling person, as the case may be, and, anything herein to the contrary notwithstanding, will survive delivery of and payment for the Shares sold hereunder and any termination of this Agreement.

Section 8. MISCELLANEOUS

(a) Press Releases and Disclosure. The Company may issue a press release describing the material terms of the transactions contemplated hereby as soon as practicable following the date of this Agreement, and may file with the Commission a Current Report on Form 8-K, with this Agreement attached as an exhibit thereto, describing the material terms of the transactions contemplated hereby, and the Company shall consult with the Agent prior to making such disclosures, and the parties hereto shall use all commercially reasonable efforts, acting in good faith, to agree upon a text for such disclosures that is reasonably satisfactory to all parties hereto. No party hereto shall issue thereafter any press release or like public statement (including, without limitation, any disclosure required in reports filed with the Commission pursuant to the Exchange Act) related to this Agreement or any of the transactions contemplated hereby without the prior written approval of the other party hereto, except as may be necessary or appropriate in the reasonable opinion of the party seeking to make disclosure to comply with the requirements of applicable law or stock exchange rules. If any such press release or like public statement is so required, the party making such disclosure shall consult with the other party prior to making such disclosure, and the parties shall use all commercially reasonable efforts, acting in good faith, to agree upon a text for such disclosure that is reasonably satisfactory to all parties hereto.

(b) No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (i) the transactions contemplated by this Agreement, including the determination of any fees, are arm's-length commercial transactions between the Company and the Agent, (ii) when acting as a principal under this Agreement, the Agent is and has been acting solely as a principal and is not the agent or fiduciary of the Company, or its stockholders, creditors, employees or any other party, (iii) the Agent has not assumed nor will assume an advisory or fiduciary responsibility in favor of the Company with respect to the transactions contemplated hereby or the process leading thereto (irrespective of whether the Agent has advised or is currently advising the Company on other matters) and the Agent does not have any obligation to the Company with respect to the transactions contemplated hereby except the obligations expressly set forth in this Agreement, (iv) the Agent and its respective Affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, and (v) the Agent has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated hereby and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it deemed appropriate.

(c) Research Analyst Independence. The Company acknowledges that the Agent's research analysts and research departments are required to and should be independent from their respective investment banking divisions and are subject to certain regulations and internal policies, and as such the Agent's research analysts may hold views and make statements or investment recommendations and/or publish research reports with respect to the Company or the offering that differ from the views of their respective investment banking divisions. The Company understands that the Agent is a full service securities firm and as such from time to time, subject to applicable securities laws, may effect transactions for its own account or the account of its customers and hold long or short positions in debt or equity securities of the companies that may be the subject of the transactions contemplated by this Agreement.

(d) Notices. All communications hereunder, unless otherwise specified, shall be in writing and shall be mailed, hand delivered or telecopied and confirmed to the parties hereto as follows:

If to the Agent:

Jefferies LLC
520 Madison Avenue
New York, NY 10022
Facsimile:
Attention: General Counsel

with a copy (which shall not constitute notice) to:

Latham & Watkins LLP
12670 High Bluff Drive
San Diego, CA 92129
Facsimile: (858) 523-5450
Attention: Michael E. Sullivan.

If to the Company:

Chimerix, Inc.
2505 Meridian Parkway, Suite 100
Durham, NC 27713
Facsimile: (919) 806-1146
Attention: Chief Executive Officer

with a copy (which shall not constitute notice) to:

Cooley LLP
4401 Eastgate Mall
San Diego, CA 92121
Facsimile: (858) 550-6420
Attention: Jason Kent

Any party hereto may change the address for receipt of communications by giving written notice to the others in accordance with this Section 8(d).

(e) Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto, and to the benefit of the employees, officers and directors and controlling persons referred to in Section 6, and in each case their respective successors, and no other person will have any right or obligation hereunder. The term "successors" shall not include any purchaser of the Shares as such from the Agent merely by reason of such purchase.

(f) Partial Unenforceability. The invalidity or unenforceability of any Article, Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Article, Section, paragraph or provision hereof. If any Article, Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

(g) Governing Law Provisions. This Agreement shall be governed by and construed in accordance with the internal laws of the State of New York applicable to agreements made and to be performed in such state. Any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby may be instituted in the federal courts of the United States of America located in the Borough of Manhattan in the City of New York or the courts of the State of New York in each case located in the Borough of Manhattan in the City of New York (collectively, the "Specified Courts"), and each party irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any such court, as to which such jurisdiction is non-exclusive) of such courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to such party's address set forth above shall be effective service of process for any suit, action or other proceeding brought in any such court. The parties irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the Specified Courts and irrevocably and

unconditionally waive and agree not to plead or claim in any such court that any such suit, action or other proceeding brought in any such court has been brought in an inconvenient forum.

(h) General Provisions. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof. This Agreement may be executed in two or more counterparts, each one of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument, and may be delivered by facsimile transmission or by electronic delivery of a portable document format (PDF) file. This Agreement may not be amended or modified unless in writing by all of the parties hereto, and no condition herein (express or implied) may be waived unless waived in writing by each party whom the condition is meant to benefit. The Article and Section headings herein are for the convenience of the parties only and shall not affect the construction or interpretation of this Agreement.

[Signature Page Immediately Follows]

If the foregoing is in accordance with your understanding of our agreement, kindly sign and return to the Company the enclosed copies hereof, whereupon this instrument, along with all counterparts hereof, shall become a binding agreement in accordance with its terms

Very truly yours,

CHIMERIX, INC.

By: /s/ Mike Andriole
Name: Mike Andriole
Title: CFO & CBO

The foregoing Agreement is hereby confirmed and accepted by the Agent in New York, New York as of the date first above written.

JEFFERIES LLC

By: /s/ Kevin J. Sheridan
Name: Kevin J. Sheridan
Title: Managing Director

EXHIBIT A

ISSUANCE NOTICE

[Date]

Jefferies LLC
520 Madison Avenue
New York, New York 10022

Attn: [_____]

Reference is made to the Open Market Sale Agreement between Chimerix, Inc. (the "**Company**") and Jefferies LLC (the "**Agent**") dated as of August 10, 2020. The Company confirms that all conditions to the delivery of this Issuance Notice are satisfied as of the date hereof.

Date of Delivery of Issuance Notice (determined pursuant to Section 3(b)(i)): _____

Issuance Amount (equal to the total Sales Price for such Shares):

$__

Number of days in selling period: __

First date of selling period: __

Last date of selling period: __

Settlement Date(s) if other than standard T+2 settlement:

__

Floor Price Limitation (in no event less than $1.00 without the prior written consent of the Agent, which consent may be withheld in the Agent's sole discretion): $ ____ per share.

Comments: _____

_____

By: ____
Name:
Title:

Schedule A

Notice Parties

The Company

Michael Sherman (msherman@chimerix.com)

Michael Andriole (mandriole@chimerix.com)

Michael Alrutz (malrutz@chimerix.com)

The Agent

Donald Lynaugh (dlynaugh@jefferies.com)

Michael Magarro (mmagarro@jefferies.com)

James O’Hara (johara1@jefferies.com)

Cooley

Jason L. Kent
T: +1 858 550 6044
jkent@cooley.com

August 10, 2020

Chimerix, Inc.
2505 Meridian Parkway, Suite 100
Durham, NC 27713

Ladies and Gentlemen:

We have acted as counsel to **Chimerix, Inc.**, a Delaware corporation (the "***Company***"), in connection with a Registration Statement on Form S□3 (the "***Registration Statement***") to be filed by the Company under the Securities Act of 1933, as amended (the "***Securities Act***"). The Registration Statement included two prospectuses, (i) a base prospectus (the "***Base Prospectus***") and (ii) a sales agreement prospectus (the "***Sales Agreement Prospectus***"), covering up to $75,000,000 of shares of common stock, par value $0.001 per share, of the Company ("***Common Stock***") that may be sold under the Open Market Sale Agreement, dated August 10, 2020, between the Company and Jefferies LLC (such agreement, the "***Sales Agreement***," and such shares, the "***Sales Agreement Shares***"). The Base Prospectus provides that it will be supplemented in the future by one or more prospectus supplements (each, a "***Prospectus Supplement***"). The Registration Statement, including the Base Prospectus (as supplemented from time to time by one or more Prospectus Supplements) and the Sales Agreement Prospectus will provide for the registration by the Company of:

- shares of Common Stock (the "***Base Prospectus Shares***");
- shares of preferred stock, par value $0.001 per share, of the Company (the "***Preferred Stock***");
- debt securities, in one or more series (the "***Debt Securities***"), which may be issued pursuant to an indenture to be dated on or about the date of the first issuance of Debt Securities thereunder, by and between a trustee to be selected by the Company (the "***Trustee***") and the Company, in the form filed as Exhibit 4.2 to the Registration Statement, and one or more indentures supplemental thereto with respect to any particular series of Debt Securities (the "***Indenture***");
- warrants to purchase Common Stock, Preferred Stock, or Debt Securities (the "***Warrants***"), which may be issued under warrant agreements, to be dated on or about the date of the first issuance of the Warrants thereunder, by and between a warrant agent to be selected by the Company (the "***Warrant Agent***") and the Company, in the forms filed as Exhibits 4.5, 4.6 and 4.7 to the Registration Statement, respectively (each, a "***Warrant Agreement***"); and
- the Sales Agreement Shares.

The Base Prospectus Shares, the Preferred Stock, the Debt Securities, the Warrants and the Sales Agreement Shares, plus any additional Common Stock, Preferred Stock, Debt Securities and Warrants that may be registered pursuant to any registration statement that the Company may hereafter file with the Securities and Exchange Commission pursuant to Rule 462(b) under the Securities Act in connection with an offering by the Company pursuant to the Registration Statement are collectively referred to herein as the "***Securities***." The Securities are being registered for offer and sale from time to time pursuant to Rule 415 under the Securities Act.

In connection with this opinion, we have examined and relied upon the Registration Statement, the Company's Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, each as currently in effect, and originals, or copies certified to our satisfaction, of such records, documents, certificates, opinions, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

In rendering this opinion, we have assumed the genuineness and authenticity of all signatures on original documents; the authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; the accuracy, completeness and authenticity of certificates of public officials; and the due authorization, execution and delivery of all documents where authorization, execution and delivery are prerequisites to the effectiveness of such documents. With respect to our opinion as to the Base Prospectus Shares, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock is authorized and available for issuance and that the consideration for the issuance and sale of the Base Prospectus Shares (or Preferred Stock or Debt Securities convertible into, or Warrants exercisable for, Common Stock) is in an amount that is not less than the par value of the Common Stock.

With respect to our opinion as to the Preferred Stock, we have assumed that, at the time of issuance and sale, a sufficient number of shares of Preferred Stock will be authorized, designated and available for issuance and that the consideration for the issuance and sale of the Preferred Stock (or Debt Securities convertible into, or Warrants exercisable for, Preferred Stock) will be in an amount that is not less than the par value of the Preferred Stock. We have also assumed that any Debt Securities or Warrants offered under the Registration Statement, and the related Indenture and Warrant Agreement will be executed in the forms filed as exhibits to the Registration Statement or incorporated by reference therein. We have also assumed that (i) with respect to Securities issuable upon conversion of any convertible Preferred Stock, such convertible Preferred Stock will be duly authorized, validly issued, fully paid and nonassessable; and (ii) with respect to any Securities issuable upon conversion of any convertible Debt Securities or upon exercise of any Warrants, such convertible Debt Securities or Warrants will constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

With respect to the Sales Agreement Shares, we have assumed (i) that the specific sale of the Sales Agreement Shares will be duly authorized by the Board of Directors of the Company, a duly authorized committee thereof or a person or body pursuant to an authorization granted in accordance with Section 152 of the General Corporation Law of the State of Delaware (the "**DGCL**") and (ii) that no more than 23,219,814 Sales Agreement Shares will be sold for a consideration not less than the par value of the Common Stock. With respect to the Sales Agreement Shares, we express no opinion to the extent that future issuances of securities of the Company and/or anti-dilution adjustments to outstanding securities of the Company cause the number of shares of Common Stock then authorized less the sum of the number of shares outstanding or committed to be issued to exceed the number of Sales Agreement Shares then issuable under the Sales Agreement.

Our opinion herein is expressed solely with respect to the DGCL and, as to the Debt Securities and the Warrants constituting valid and legally binding obligations of the Company, the laws of the State of New York. Our opinion is based on these laws as in effect on the date hereof. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state law, securities rule or regulation.

On the basis of the foregoing and in reliance thereon, and subject to the qualifications herein stated, we are of the opinion that:

1. With respect to the Base Prospectus Shares offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the issuance of the Base Prospectus Shares has been duly authorized by all necessary corporate action on the part of the Company; (iii) the issuance and sale of the Base Prospectus Shares does not violate any applicable law, are in conformity with the Company's then operative certificate of incorporation (the "***Certificate of Incorporation***") and bylaws (the "***Bylaws***"), do not result in a default under or breach of any agreement or instrument binding upon the Company and comply with any applicable requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (iv) the certificates, if any, for the Base Prospectus Shares have been duly executed by the Company, countersigned by the transfer agent therefor and duly delivered to the purchasers thereof against payment therefor, then the Base Prospectus Shares, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s) and in accordance with a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Preferred Stock, or convertible Debt Securities in accordance with their terms, or upon exercise of any Warrants in accordance with their terms, will be validly issued, fully paid and nonassessable.

2. With respect to the Preferred Stock offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all

become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the terms and issuance of the Preferred Stock have been duly authorized by all necessary corporate action on the part of the Company; (iii) the terms of the shares of Preferred Stock and their issuance and sale do not violate any applicable law, are in conformity with the Certificate of Incorporation and Bylaws, do not result in a default under or breach of any agreement or instrument binding upon the Company and comply with any applicable requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (iv) the certificates, if any, for the Preferred Stock have been duly executed by the Company, countersigned by the transfer agent therefor and duly delivered to the purchasers thereof against payment therefor, then the Preferred Stock, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s) and in accordance with a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon conversion of any convertible Debt Securities in accordance with their terms, or upon exercise of any Warrants in accordance with their terms, will be validly issued, fully paid and nonassessable.

3. With respect to any series of the Debt Securities issued under the Indenture and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the Indenture has been duly authorized by the Company and the Trustee by all necessary corporate action; (iii) the Indenture in substantially the form filed as an exhibit to the Registration Statement, has been duly executed and delivered by the Company and the Trustee and has been qualified under the Trust Indenture Act of 1939, as amended; (iv) the issuance and terms of the Debt Securities have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Debt Securities and of their issuance and sale have been duly established in conformity with the Indenture so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the notes representing the Debt Securities have been duly executed and delivered by the Company and authenticated by the Trustee pursuant to the Indenture and delivered against payment therefor, then the Debt Securities, when issued and sold in accordance with the Indenture and a duly authorized, executed and delivered purchase, underwriting or similar agreement, or upon exercise of any Warrants in accordance with their terms, will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting creditors' rights generally, and by general equitable principles (regardless of whether such enforceability is considered in a proceeding at law or in equity).

4. With respect to the Warrants issued under the Warrant Agreements and offered under the Registration Statement, provided that (i) the Registration Statement and any required post-

effective amendment thereto have all become effective under the Securities Act and the Base Prospectus and any and all Prospectus Supplement(s) required by applicable laws have been delivered and filed as required by such laws; (ii) the Warrant Agreement has been duly authorized by the Company and the Warrant Agent by all necessary corporate action; (iii) the Warrant Agreement has been duly executed and delivered by the Company and the Warrant Agent; (iv) the issuance and terms of the Warrants have been duly authorized by the Company by all necessary corporate action; (v) the terms of the Warrants and of their issuance and sale have been duly established in conformity with the Warrant Agreement and as described in the Registration Statement, the Base Prospectus and the related Prospectus Supplement(s), so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company, so as to be in conformity with the Certificate of Incorporation and Bylaws, and so as to comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company; and (vi) the Warrants have been duly executed and delivered by the Company and authenticated by the Warrant Agent pursuant to the Warrant Agreement and delivered against payment therefor, then the Warrants, when issued and sold as contemplated in the Registration Statement, the Base Prospectus and the Prospectus Supplement(s) and in accordance with the Warrant Agreement and a duly authorized, executed and delivered purchase, underwriting or similar agreement, will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting creditors' rights generally, and by general equitable principles (regardless of whether such enforceability is considered in a proceeding at law or in equity).

5. The Sales Agreement Shares, when issued and paid for in accordance with the Sales Agreement and as provided in the Sales Agreement Prospectus, will be validly issued, fully paid and nonassessable.

* * * * *

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the caption "Legal Matters" in the Base Prospectus and the Sales Agreement Prospectus. We further consent to the incorporation by reference of this

opinion into any registration statement filed pursuant to Rule 462(b) under the Securities Act with respect to additional Securities.

Our opinion set forth above is limited to the matters expressly set forth in this letter, and no opinion is implied or may be inferred beyond the matters expressly stated. This opinion speaks only as to law and facts in effect or existing as of the date hereof, and we undertake no obligation or responsibility to update or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention or any changes in law that may hereafter occur.

Very truly yours,

Cooley LLP

By:/s/ Jason L. Kent
Jason L. Kent

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 2

2. AMENDMENT/MODIFICATION NO	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ NO	5. PROJECT NO (*if applicable*)
P00059	See Block 16C	N/A.	

6. ISSUED BY CODE	ASPR-BARDA	7. ADMINISTERED BY (*if other than line item 6*) CODE	ASPR-BARDA02
ASPR-BARDA 200 Independence Ave., S.W. Room 640-G Washington DC 20201		ASPR-BARDA 330 Independence Ave., SW, Rm G640 Washington DC 20201	

8. NAME AND ADDRESS OF CONTRACTOR (*No, street, county, State and ZIP Code*)			
CHIMERIX, INC. 1377270 CHIMERIX, INC. 2505 MERIDIAN P 2505 MERIDIAN PKWY STE 340 DURHAM NC 277135246		(x)	9A AMENDMENT OF SOLICITATION NO.
			9B DATED (*SEE ITEM 11*)
		X	10A MODIFICATION OF CONTRACT/ORDER NO HHSO100201100013C
			10B DATED (*SEE ITEM 13*) 02/16/2011
CODE 1377270	FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified of receipt of Offers ☐ is extended. ☐ is not extended
Offers must acknowledge receipt of this amendment prior to the hour end dale specified in the solicitation or as amended, by one or the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (*if required*)
N/A.

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO (*Specify authority*) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO IN ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (*such as changes in paying office, appropriation date, etc.*) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF
X	D. OTHER (*Specify type of modification and authority*) Bilateral: Mutual Agreement of the Parties.

E. IMPORTANT: Contractor ☐ is not. ☐ is required to sign this document and return 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible*)

Tax ID Number: 33-0903395

DUNS Number: 121785997

A. The purpose of this no cost bilateral modification is to incorporate the following changes into the contract:

1. The period of performance for Option 2/CLIN 0003 of Contract Number HHSO100201100013C ONLY is hereby changed from 1 September 2014 through 31 May 2020 to 1 September 2014 through 20 August 2020, at no additional cost to the Government.

2. The period of performance for CLIN 0004 of Contract Number HHSO100201100013C ONLY is hereby changed from 11 September 2015 through 31 May 2020 to 11 September 2015 through 20 Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (*Type or print*)		16A. NAME AND TITLE OF CONTRACTING OFFICER (*Type or print*)	
Michael Alrutz, SVP & General Counsel		ETHAN J. MUELLER	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
/s/ Michael Alrutz (*Signature of person authorized to sign*)	5/1/20	/s/ Ethan J. Mueller (*Signature of person authorized to sign*)	5/16/20

NSN 7540-152-8070 STANDARD FORM 30 (REV 10-83)
Previous edition unusable Prescribed by GSA
FAR (48 CFR) 53.243

NAME OF OFFEROR OR CONTRACTOR

CHIMERIX, INC. 1377270

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	August 2020, at no additional cost to the Government. 3. The total amount, scope and period of performance of all other CLINs that are currently being performed under the contract remain unchanged. This modification does not exercise any unexercised Option CLINs under the contract and does not authorize any performance of efforts under any unexercised Option CLINs under the contract. In addition, the total amount, scope and period of performance of all unexercised Option CLINs under the contract remain unchanged. This modification also confirms that all activities under the base period of performance CLIN 0001 were completed as of 31 May 2013 and confirms that all activities under the Option 1/CLIN 0002 period of performance were completed as of 30 April 2015. B. This is a no cost bilateral modification. All other terms and conditions of Contract Number HHSO100201100013C remain unchanged. Period of Performance: 02/16/2011 to 08/20/2020				

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 of 7

2. AMENDMENT/MODIFICATION NO	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ NO	5. PROJECT NO (*if applicable*)
P00060	See Block 16C	N/A.	

6. ISSUED BY CODE	ASPR-BARDA	7. ADMINISTERED BY (*if other than line item 6*) CODE	ASPR-BARDA02
ASPR-BARDA 200 Independence Ave., S.W. Room 640-G Washington DC 20201		ASPR-BARDA 330 Independence Ave., SW, Rm G640 Washington DC 20201	

8. NAME AND ADDRESS OF CONTRACTOR (*No, street, county, State and ZIP Code*)			
CHIMERIX, INC. 1377270 CHIMERIX, INC. 2505 MERIDIAN P 2505 MERIDIAN PKWY STE 340 DURHAM NC 277135246		(x)	9A AMENDMENT OF SOLICITATION NO.
			9B DATED (*SEE ITEM 11*)
		X	10A MODIFICATION OF CONTRACT/ORDER NO HHSO100201100013C
			10B DATED (*SEE ITEM 13*) 02/16/2011
CODE 1377270	FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified of receipt of Offers ☐ is extended. ☐ is not extended
Offers must acknowledge receipt of this amendment prior to the hour end dale specified in the solicitation or as amended, by one or the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (*if required*)
N/A.

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO (*Specify authority*) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO IN ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (*such as changes in paying office, appropriation date, etc.*) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF
X	D. OTHER (*Specify type of modification and authority*) Bilateral: Mutual Agreement of the Parties.

E. IMPORTANT: Contractor ☐ is not. ☐ is required to sign this document and return 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible*)

Tax ID Number: 33-0903395

DUNS Number: 121785997

A. The purpose of this no cost bilateral modification is to incorporate the following changes into the contract:

1. The Government and the Contractor hereby bilaterally modify the Statement of Work requirements for CLIN 0005 for the purpose of adding within scope Clinical, Regulatory and CMC efforts per recent FDA guidance. The Government and the Contractor bilaterally agree to the Contractor's performance of a revised CLIN 0005 under the contract. The Government and the Contractor hereby bilaterally modify this contract for the purposes of adding the total amount of CLIN 0005 to the contract as follows:

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (*Type or print*)		16A. NAME AND TITLE OF CONTRACTING OFFICER (*Type or print*)	
Mike Andriole CFO & CBO		ETHAN J. MUELLER	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
/s/ Mike Andriole (*Signature of person authorized to sign*)	6/15/20	/s/ Ethan J. Mueller (*Signature of person authorized to sign*)	6/17/20

NSN 7540-152-8070 STANDARD FORM 30 (REV 10-83)
Previous edition unusable Prescribed by GSA
FAR (48 CFR) 53.243

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	CLIN 0005:				

Total Estimated Cost: $4,293,914.00
Total Fixed Fee: $300,574.00
Total Estimated Cost Plus Fixed Fee: $4,594,488.00

The total period of performance of CLIN 0005 under the contract is from 17 June 2020 through 15 February 2021.

2. This modification also results a change in the total amount of the contract from [*] by $4,594,488.00 to [*] as well as the following:

Total Estimated Cost of the Contract: From [*] by $4,293,914.00 To [*]

Total Fixed Fee of the Contract: From $4,303,394.00 by $300,574.00 to $4,603,968.00

Total Estimated Cost Plus Fixed Fee of the Contract: From [*] By $4,594,488.00 to [*].

3. This modification hereby results in a increase in the total amount of the contract From [*] by $4,594,488.00 to [*].

4. Block 15G of the SF 26, the amount of [*] shall be changed to [*].

5. Also in Block 14 of the SF 26, the following CAN number is added as follows:

Appropriation Year: 2020; Object Class: 25106; CAN# 1992020 $4,594,488.00.

6. Total expense for all domestic and foreign travel (transportation, lodging, subsistence and incidental expenses) incurred in direct performance of this contract shall not exceed [*] for CLIN 0005.

7. For CLIN 0005 Only, Total Estimated Cost - $4,293,914.00, Total Fixed Fee - $300,574.00 and Total Estimated Cost Plus Fixed Fee - $4,594,488.00 Only, the following Indirect Cost Ceiling is established for which Chimerix cannot seek reimbursement in excess of the following Indirect Cost Ceiling and within the Total Estimated Cost of $4,293,914.00 Only:

[*]

Also, for CLIN 0005, the following Indirect Cost Ceiling Rates are established for which Chimerix cannot seek reimbursement in excess of the following Indirect Cost Ceiling Rates:

[*] Fringe, [*] G&A

8. Under Attachment 1, Statement of Work, Paragraphs 6, 6.1, 6.2, 6.3, 6.4, 6.5 and

Continued ...

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)

6.6 Only are hereby deleted and replaced with the attached (2 Pages). The efforts within CLIN 0005 that involve clinical human trials/studies and non-clinical animal studies cannot be performed until the receipt and approval of all required Protocols by BARDA inclusive of all IRB, OHRP approvals and any required Ethics Approvals for any clinical trials/studies and any required approved OLAW Assurances and IIA approvals from OLAW for any non clinical animal studies.

9. The incorporation of the attached Statement of Work (SOW) revisions that are contained in the paragraph above also result in the incorporation of the attached changes for CLIN 5 Deliverables Only (2 Pages) into the contract into WBS Milestones/Deliverables and Technical Deliverables and Technical Deliverables and Contract Milestones and Go/No Go Decision Gates into Article F.2. Deliverables. All previous CLIN 5 Deliverables Only are hereby deleted and replaced by the attached revised CLIN 5 Deliverables (2 Pages).

10. The period of performance for Option 2/CLIN 0003 of Contract Number HHSO100201100013C remains unchanged from 1 September 2014 through 20 August 2020.

11. The period of performance for Option 3/CLIN 0004 of Contract Number HHSO100201100013C remains unchanged from 1 September 2014 through 20 August 2020.

12. The total amount, scope and period of performance of all other CLINs that are currently being performed under the contract remain unchanged. This modification also confirms that all activities under the base period of performance CLIN 0001 were completed as of 31 May 2013 and confirms that all activities under the Option 1/CLIN 0002 period of performance were completed as of 30 April 2015.

B. This is a no cost bilateral modification. All other terms and conditions of Contract Number HHSO100201100013C remain unchanged.
Appr. Yr.: 2020 CAN: 1992020 Object Class: 25106
Period of Performance: 02/16/2011 to 02/15/2021

Change Item 5 to read as follows(amount shown is the obligated amount):

NDA Application/Submission to FDA, Clinical, $4,594,488.00 Regulatory and CMC efforts.

Reports and Other Data Deliverables.
Obligated Amount: $4,594,488.00

6. PHASE V: NDA Submission PHASE

Research and development of CMX-001 for the treatment of smallpox to include the following activities: [*] The contractor shall carry out the following tasks and subtasks and in accordance with an agreed upon Integrated Master Schedule and Integrated Master Plan (to be submitted with the full CLIN005 package) which shall further detail the conduct of the specific tasks and subtasks.

6.1 Program Management (Consistent with section 2.1)

6.1.1 Program management scope in BASE year is consistent with program management scope in each option year.

6.2 Non-Clinical toxicology

6.2.1 N/A (no scope)

6.3 Non-Clinical

6.3.1 N/A (no scope)

6.4 Clinical

6.4.1 Performing a [*]. Part of the assessment is the identification of [*] as needed for NDA-approval readiness

6.4.2 A consolidated [*].

6.5 Regulatory

6.5.1 [*];
6.5.2 [*].
6.5.3 [*];
6.5.4 [*];
6.5.5 [*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

6.6 CMC

6.6.1 [*].

6.6.2 [*].

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

WBS	WBS Title	Subcontractor	Milestone	Deliverables	SOW Reference
	[*]				
[*]	[*]				
[*]	[*]				
[*]	[*]				
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	
[*]	[*]				
[*]	[*]				
[*]	[*]				
[*]	[*]				
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]				
[*]	[*]				
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]				
[*]	[*]				
[*]	[*]	[*]	[*]	[*]	[*]
[*]	[*]	[*]	[*]	[*]	[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 2

2. AMENDMENT/MODIFICATION NO	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ NO	5. PROJECT NO (*if applicable*)
P00061	See Block 16C	N/A.	

6. ISSUED BY CODE	ASPR-BARDA	7. ADMINISTERED BY (*if other than line item 6*) CODE	ASPR-BARDA02
ASPR-BARDA 200 Independence Ave., S.W. Room 640-G Washington DC 20201		ASPR-BARDA 330 Independence Ave., SW, Rm G640 Washington DC 20201	

8. NAME AND ADDRESS OF CONTRACTOR (*No, street, county, State and ZIP Code*)		
CHIMERIX, INC. 1377270 CHIMERIX, INC. 2505 MERIDIAN P 2505 MERIDIAN PKWY STE 340 DURHAM NC 277135246	(x)	9A AMENDMENT OF SOLICITATION NO.
		9B DATED (*SEE ITEM 11*)
	X	10A MODIFICATION OF CONTRACT/ORDER NO HHSO100201100013C
		10B DATED (*SEE ITEM 13*) 02/16/2011
CODE 1377270	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified of receipt of Offers ☐ is extended. ☐ is not extended
Offers must acknowledge receipt of this amendment prior to the hour end dale specified in the solicitation or as amended, by one or the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (*if required*)
N/A.

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO (*Specify authority*) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO IN ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (*such as changes in paying office, appropriation date, etc.*) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF
X	D. OTHER (*Specify type of modification and authority*) Bilateral: Mutual Agreement of the Parties.

E. IMPORTANT: Contractor ☐ is not. ☐ is required to sign this document and return 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (*Organized by UCF section headings, including solicitation/contract subject matter where feasible*)
Tax ID Number: 33-0903395
DUNS Number: 121785997
A. The purpose of this no cost bilateral modification is to incorporate the following changes into the contract for the purposes of [*]:

1. [*] is hereby deleted.

2. [*] are hereby deleted under Section

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (*Type or print*)		16A. NAME AND TITLE OF CONTRACTING OFFICER (*Type or print*)	
Michael Alrutz, SVP & General Counsel		ETHAN J. MUELLER	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
/s/ Michael Alrutz (*Signature of person authorized to sign*)	7/28/20	/s/ Ethan J. Mueller (*Signature of person authorized to sign*)	7/28/20

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	[*] 3. [*]. 4. [*]. 5. [*]. All other requirements under the Statement of Work remain unchanged. 6. The total amount, scope and period of performance of all other CLINs that are currently being performed under the contract remain unchanged. This modification also confirms that all activities under the base period of performance CLIN 0001 were completed as of 31 May 2013 and confirms that all activities under the Option 1/CLIN 0002 period of performance were completed as of 30 April 2015. B. This is a no cost bilateral modification. The total amount, scope and all other terms and conditions of Contract Number HHSO100201100013C remain unchanged. Period of Performance: 02/16/2011 to 02/15/2021				

NINTH AMENDMENT TO OFFICE LEASE

This NINTH AMENDMENT TO OFFICE LEASE (this "Ninth Amendment") is entered into and executed on June 24, 2020 (the "Effective Date"), by and between CHIMERIX, INC., a Delaware corporation ("Tenant"), and BRI 1875 MERIDIAN, LLC, a Delaware limited liability company ("Landlord").

RECITALS

A. Landlord, as successor-in-interest to IVC Meridian TT O, LLC, a Delaware limited liability company, and Tenant are parties to that certain Office Lease dated September 1, 2007 (the "Original Lease", as amended by that certain First Amendment to Office Lease dated December 19, 2008, that certain Second Amendment to Office Lease dated January 21, 2011, that certain Third Amendment to Office Lease dated March 1, 2012, that certain Fourth Amendment to Office Lease dated February 13, 2013, that certain Fifth Amendment to Office Lease dated July 2, 2014 [the "Fifth Amendment"], that certain Sixth Amendment to Office Lease dated April 28, 2015 [the "Sixth Amendment"], that certain Seventh Amendment to Office Lease dated March 10, 2017, and that certain Eighth Amendment to Office Lease dated July 13, 2017, collectively, the "Lease") pursuant to which Landlord leases to Tenant the Premises, as defined and more particularly described in the Lease (and sometimes referred to in this Ninth Amendment as the "Ninth Amendment Existing Premises"), containing 24,862 square feet of Rentable Area ("RSF") and comprised of (i) 6,836 RSF on the first (1st) floor of the Building (as hereinafter defined), known as Suite 100, (ii) 3,537 RSF on the second (2nd) floor of the Building, known as Suite 250 ("Suite 250"), (iii) 3,433 RSF on the third (3rd) floor of the Building, known as Suite 300, and (iv) 11,056 RSF on the third (3rd) floor of the Building, known as Suite 340, all in the building located at 2505 Meridian Parkway, Durham, North Carolina (as defined and more particularly described in the Lease, the "Building") of the complex of office buildings commonly known as the Meridian Corporate Center.

B. The Term of the Lease is currently scheduled to expire on February 28, 2021.

C. Tenant desires to surrender that portion of the Ninth Amendment Existing Premises containing 3,537 RSF known as Suite 250 and located on the second (2nd) floor of the Building, as outlined on EXHIBIT A attached hereto (the "Ninth Amendment Surrendered Premises").

D. Landlord and Tenant desire to extend the Term of the Lease for a period of sixty-five (65) consecutive months with respect to that certain remaining portion of the Ninth Amendment Existing Premises containing 21,325 RSF and comprised of (i) 6,836 RSF on the first (1st) floor of the Building and known as Suite 100, (ii) 3,433 RSF on the third (3rd) floor of the Building and known as Suite 300, and (iii) 11,056 RSF on the third (3rd) floor of the Building and known as Suite 340, also as outlined on EXHIBIT A attached hereto (collectively, the "Ninth Amendment Remaining Premises").

AGREEMENT

For good and valuable consideration which the parties acknowledge receiving, Landlord and Tenant hereby agree, and the Lease is amended, as follows:

1. Recitals. The Recitals are confirmed to be true and correct and are incorporated into this Ninth Amendment.

2. Application of Lease Terms. Capitalized terms used in this Ninth Amendment and not defined herein shall have the meanings given to them in the Lease.

3. Termination of Term as to Surrendered Premises. The Term of the Lease as to the Ninth Amendment Remaining Premises is being extended as set forth in Section 4 below. However, the Term of the Lease as to the Ninth Amendment Surrendered Premises is not being extended, and shall expire at 11:59 p.m. local Durham, North Carolina time on February 28, 2021 (the "Ninth Amendment Surrendered Premises Termination Date"). Base Rent for the Ninth Amendment Surrendered Premises, Tenant's New Share of Taxes in excess of the Taxes attributable to the Sixth Amendment Base Tax Year for the Ninth Amendment Surrendered Premises, and Tenant's New Share of Expenses in excess of the Expenses attributable to the Sixth Amendment Base Expense Year for the Ninth Amendment Surrendered Premises, will cease to accrue as of March 1, 2021, and Tenant shall have no further obligations with respect to payment of such Rent for the Ninth Amendment Surrendered Premises; provided, however, that Tenant shall continue to be liable for all of its obligations under the Lease, as amended hereby, arising or accruing on and prior to the Ninth Amendment Surrendered Premises Termination Date in connection with the Ninth Amendment Surrendered Premises, and expiration of the Lease with respect to the Ninth Amendment Surrendered Premises shall not act as a release of Tenant for any such obligations, all of which shall survive the Ninth Amendment Surrendered Premises Termination Date. Effective on and following March 1, 2021, the term "Premises", as set forth in the Lease and this Ninth Amendment, shall be deemed amended and restated to include only the Ninth Amendment Remaining Premises. On and following March 1, 2021, except as may be otherwise expressly agreed to in writing by Landlord, Tenant and any subtenants or other occupants claiming by, through or under Tenant will have no rights to occupy or use the Ninth Amendment Surrendered Premises, and if Tenant and any subtenants or other occupants claiming by, through or under Tenant fail to vacate all of the Ninth Amendment Surrendered Premises by the Ninth Amendment Surrendered Premises Termination Date in accordance with the terms of the Lease, as amended hereby, such failure will constitute a default by Tenant under the Lease and Tenant will be subject to the holdover provisions of Article 24 of the Original Lease, without limitation or waiver of any other rights or remedies of Landlord. Nothing herein shall be construed as Landlord's consent to any such holdover.

4. Extension of Term. The Term of the Lease is hereby extended as to the Ninth Amendment Remaining Premises for a period of sixty-five (65) consecutive months to begin on March 1, 2021 and to expire at 11:59 p.m. local Durham, North Carolina time on July 31, 2026 (the "Expiration Date") unless sooner terminated or extended by written agreement of the parties. Except for Tenant's option to extend set forth in Section 11 of the Sixth Amendment (as amended by Section 12 of this Ninth Amendment), Tenant shall have no right or option to extend or renew the Term beyond the Expiration Date defined above, and any provision of the Lease to the contrary is hereby deleted. All references in the Lease and later references in this Ninth Amendment to the "Term", the "Additional Premises Term", the "Extension Period", the "Second Extension Period", and the "Third Extension Period" shall mean the Term as extended hereby, and all references in the Lease and later references in this Ninth Amendment to the "Expiration Date" shall mean the Expiration Date as defined above.

5. Base Rent.

(a) Ninth Amendment Existing Premises. Tenant's obligation to continue to pay Base Rent for the entire Ninth Amendment Existing Premises for the period on and prior to the Ninth Amendment Surrendered Premises Termination Date is unaffected by this Ninth Amendment and shall be governed by the terms and provisions of the Lease.

(b) Ninth Amendment Remaining Premises. Effective on March 1, 2021 and continuing through the Expiration Date, Tenant shall pay Base Rent for the Ninth Amendment Remaining Premises in the following amounts:

Time Period	Annual Base Rent Rate Per RSF of the Ninth Amendment Remaining Premises	Annualized Base Rent for the Ninth Amendment Remaining Premises	Monthly Base Rent for the Ninth Amendment Remaining Premises
March 1, 2021 through February 28, 2022	$25.00	$533,124.96	$44,427.08*
March 1, 2022 through February 28, 2023	$25.75	$549,118.80	$45,759.90
March 1, 2023 through February 29, 2024	$26.52	$565,539.00	$47,128.25
March 1, 2024 through February 28, 2025	$27.32	$582,599.04	$48,549.92
March 1, 2025 through February 28, 2026	$28.14	$600,085.56	$50,007.13
March 1, 2026 through the Expiration Date (i.e. July 31, 2026)	$28.98	$617,998.56	$51,499.88

Tenant shall pay the above Base Rent for the Ninth Amendment Remaining Premises, and all other Rent and amounts payable by Tenant under the Lease, as amended hereby, for the Ninth Amendment Remaining Premises, at the times and place and in the manner provided in the Lease, as modified by this Ninth Amendment.

*Notwithstanding the foregoing, the five (5) monthly installments of Base Rent for the Ninth Amendment Remaining Premises otherwise coming due on March 1, 2021, April 1, 2021, May 1, 2021, June 1, 2021, and on July 1, 2021 shall be conditionally abated in their entirety. Effective on and following August 1, 2021, Tenant shall make Base Rent payments as otherwise provided in the Lease, as amended hereby. Notwithstanding such abatement of the monthly installments of Base Rent, as set forth above, (a) all other Rent and amounts due under the Lease, as amended hereby, shall be payable as provided in the Lease, as amended hereby, and (b) any increases in Base Rent set forth in the Lease, as amended hereby, shall occur on the dates scheduled therefor.

Abatement of the monthly installments of Base Rent for the Ninth Amendment Remaining Premises, as set forth above, is conditioned upon Tenant's full and timely performance of its obligations under the Lease, as amended hereby. If Tenant is in Default of the Lease, as amended hereby, then abatement of the monthly installments of Base Rent, as set forth above, shall immediately become void, and Tenant shall promptly pay to Landlord, in addition to all other amounts due to Landlord under the Lease, as amended hereby, the full amount of all Base Rent herein abated.

6. Tenant's Share of Taxes; Tenant's Share of Expenses. Nothing in this Ninth Amendment affects Tenant's obligation to continue to pay Additional Rent, including, without limitation, Tenant's New Share of Taxes in excess of the Taxes attributable to the Sixth Amendment Base Tax Year for the Ninth Amendment Existing Premises (as set forth in Section 9.B. of the Sixth Amendment), and Tenant's New Share of Expenses in excess of the Expenses attributable to the Sixth Amendment Base Expense Year for the Ninth Amendment Existing Premises (as set forth in Section 9.B. of the Sixth Amendment),

and all other Rent and amounts due under the Lease for the Ninth Amendment Existing Premises on and prior to the Ninth Amendment Surrendered Premises Termination Date. Effective on and following March 1, 2021, Tenant shall continue to pay Additional Rent for the Ninth Amendment Remaining Premises, including, without limitation, Tenant's Share of Taxes in excess of the Taxes attributable to the Base Tax Year for the Ninth Amendment Remaining Premises, and Tenant's Share of Expenses in excess of the Expenses attributable to the Base Expense Year for the Ninth Amendment Remaining Premises, and all other Rent and amounts due under the Lease, as amended hereby, for the Ninth Amendment Remaining Premises, at the applicable times and place and in the manner provided in the Lease, as modified by this Ninth Amendment.

7. Tenant's Share. Nothing in this Ninth Amendment affects Tenant's New Share (as defined in Section 9.B. of the Sixth Amendment) for the period on and prior to the Ninth Amendment Surrendered Premises Termination Date. Effective on and following March 1, 2021, Tenant's Share, as defined in Article 30.(Q) of the Original Lease (as amended), or "Tenant's New Share", for the Ninth Amendment Remaining Premises shall be modified to mean 49.94%, such being calculated by dividing the deemed rentable area of the Ninth Amendment Remaining Premises (i.e. 21,325 RSF) by the deemed rentable area of the Building (i.e. 42,705 RSF), and expressing the fraction as a percentage, but subject to any future expansions or contractions of the Ninth Amendment Remaining Premises and/or the Building.

8. Base Tax Year; Base Expense Year. Effective on and following March 1, 2021, (i) the Base Tax Year, as defined in Section 1.H. of the Original Lease (as amended), shall mean the calendar year 2021, and (ii) the Base Expense Year, as defined in Section 1.H. of the Original Lease (as amended), shall mean the calendar year 2021.

9. Controllable Expenses. Effective on March 1, 2021 and continuing through the Expiration Date, for purposes of calculating Tenant's Share of Expenses for each calendar year following the Base Expense Year, the maximum increase (the "Controllable Expense Cap") in the amount of Controllable Expenses (defined below) that may be included in calculating Expenses for each calendar year following the Base Expense Year shall be limited to five percent (5%) per year on a compounded and ongoing basis. To illustrate the compounding nature of the Controllable Expense Cap on Expenses, the maximum amount of Controllable Expenses that may be included in Expenses for each calendar year following the Base Expense Year shall equal the product of the total Controllable Expenses for the Base Expense Year and the following percentages for the following calendar years: 105% for 2022; 110.25% for 2023; 115.76% for 2024; 121.55% for 2025, etc. (without regard to what was actually incurred and subject to the remaining terms of this Section 9). As used herein, "Controllable Expenses" shall mean all Expenses (after the gross‐up adjustment set forth in Article 3.E. of the Original Lease) that are within the reasonable control of Landlord; thus, excluding Taxes, costs of utilities, Utility Costs, costs of insurance, any employment costs based upon the minimum wage (including benefits), any costs Landlord is required to incur to comply with any rule, code, law, regulation, or ordinance adopted or promulgated after the Effective Date hereof (or new or different interpretations of any of the foregoing adopted or promulgated after the Effective Date hereof) of any governmental authority or agency, any expense increase arising from the unionization of any service rendered to the Building or the Property, snow removal, and any other costs beyond the reasonable control of Landlord. As used herein, "ongoing basis" means that, if actual Controllable Expenses increase by more than the Controllable Expense Cap amount for any given year, Landlord may carry over to the following years any such amounts by which actual Controllable Expenses exceeded the Controllable Expense Cap in such prior year(s), but only to the extent that they do not cause an exceedance of the Controllable Expense Cap in any of the following years.

10. Reduction in Parking. Effective on and following March 1, 2021, Tenant shall have the right to use Tenant's Share (i.e. 49.94%) of the total number of unassigned parking spaces in in the

Parking Facility, subject and pursuant to the terms and conditions of the Lease, including, without limitation, Section (24) of Exhibit "B" attached to the Original Lease.

11. Cancellation of Right of First Offer. Tenant's right of first offer set forth in Section 9 of the Fifth Amendment (as amended by Section 14 of the Sixth Amendment) is hereby deleted in its entirety and of no further force or effect.

12. Cancellation of Option to Lease Must-Take Space. Tenant's option to lease the Must-Take Space, as set forth in Section 10 of the Sixth Amendment (as amended by Section 14 of the Sixth Amendment), is hereby deleted in its entirety and of no further force or effect.

13. Extension Option. During the Term, as same is extended by this Ninth Amendment, Tenant shall continue to have one (1) option to extend the Term for a period of five (5) years pursuant to the terms and conditions of Section 11 of the Sixth Amendment; provided, however, that all references therein to the "Sixth Extension Period" are hereby replaced with the "Extension Period".

14. Cancellation of Other Options. Except as otherwise ratified or expressly granted in this Ninth Amendment, all options of Tenant set forth in the Lease to terminate the Lease, extend or renew the Term of the Lease, or to expand or contract the RSF of the Premises (whether expansion options, surrender options, termination options, rights of refusal, rights of offer, or other similar rights) are hereby deleted in their entirety and of no further force or effect.

15. Refurbishment Allowance. Tenant currently occupies the Ninth Amendment Remaining Premises, and Tenant shall be deemed to have accepted the Ninth Amendment Remaining Premises for the Term, as same is extended by this Ninth Amendment, in its "**AS IS – WHERE IS, WITH ALL FAULTS**" condition on and following the Effective Date of this Ninth Amendment, without any representations or warranties as to the condition of the Ninth Amendment Remaining Premises made by Landlord or relied on by Tenant. Except for Landlord's repair and maintenance obligations as expressly set forth in the Lease, and except for Landlord's funding of the Refurbishment Allowance pursuant to the provisions of EXHIBIT B attached hereto (the "Ninth Amendment Work Letter"), Landlord has no obligations to make, or contribute to the costs of, any modifications, alterations or improvements to the Ninth Amendment Surrendered Premises, Ninth Amendment Remaining Premises, or the Building, and any improvements to the Ninth Amendment Existing Premises shall be at Tenant's sole cost.

16. Landlord's Notice Address. Landlord's address for notice, as set forth in Section 1.M. of the Original Lease, is hereby modified to read in its entirety:

Accesso Partners LLC
400 Interstate North Parkway, Suite 1250
Atlanta, Georgia 30339
Attn: Asset Manager

With a copy to:

Accesso Services LLC
2525 Meridian Parkway, Suite 55
Durham, NC 27713
Attn: Property Manager

17. Landlord's Payment Address. Landlord's address for payments under the Lease, as set forth in Section 1.O. of the Original Lease, is as follows:

If sent by regular mail:

BRI 1875 Meridian, LLC
P.O. Box 714802
Cincinnati, OH 45271-4802

If sent via Overnight mail:

Attn: Wholesale Lockbox # (714802)
BRI 1875 Meridian LLC
895 Central Ave, Suite 600
Cincinnati, OH 45202

If sent by wire transfer or ACH:

Beneficiary: BRI 1875 Meridian LLC LB FBO JP Morgan Chase Bank NA, as mortgagee
Account Number: 329681280825
Routing Number: 021300077
Bank Name: KeyBank

18. Brokers. Tenant represents that it has had no dealings with any broker or agent in connection with the negotiation or execution of this Ninth Amendment other than Foundry Commercial ("Landlord's Broker"), whose rights to a commission to be paid by Landlord are governed by a separate written agreement with Landlord, and Davis Moore ("Tenant's Broker"), whose rights to a commission to be paid by Landlord are also governed by a separate written agreement with Landlord. Tenant shall indemnify, defend and hold Landlord harmless from and against any and all claims, costs, expenses or liabilities, including reasonable attorneys' fees, for commissions or other compensation claimed by any broker or agent other than Landlord's Broker and Tenant's Broker with regard to this Ninth Amendment as a result of any dealings with Tenant or claiming by or through Tenant.

19. Representations. As of the Effective Date of this Ninth Amendment, Tenant hereby represents and warrants to Landlord the following, all of which shall survive the expiration or termination of the Lease: (i) Tenant is the sole legal and equitable owner of the leasehold estate of the "Tenant" under the Lease and is the only occupant of the Ninth Amendment Existing Premises other than the approved subtenant occupying Suite 250 on the Effective Date hereof; (ii) Tenant has not previously assigned or transferred any interest in the Lease (other than as security for any indebtedness) or sublet the Ninth Amendment Existing Premises or any portion thereof; and (iii) Tenant has full power and authority to execute and deliver this Ninth Amendment.

20. Counterpart Execution. This Ninth Amendment may be executed in a number of identical counterparts. If so executed, each of such counterparts is to be deemed an original for all purposes, and all such counterparts shall, collectively, constitute one instrument, but, in making proof of this instrument, it shall not be necessary to produce or account for more than one such counterpart. Executed counterparts of this Ninth Amendment may be exchanged by electronic mail, which executed counterparts shall serve as originals for all purposes.

21. No Default. Tenant acknowledges that as of the Effective Date of this Ninth Amendment, to its actual knowledge, Landlord has performed all of its obligations under the Lease, Landlord is not in default under the Lease, and Tenant has no claims, counterclaims, set-offs or defenses against Landlord arising out of the Lease or relating thereto.

22. Intentionally Omitted.

23. Ratification. As amended hereby, the Lease is hereby ratified and confirmed by each party as being in full force and effect. Each party agrees that, as amended hereby, the Lease is the binding and enforceable obligation of such party. To the extent of any conflict or inconsistency between this Ninth Amendment and the Lease, the terms of this Ninth Amendment shall govern and control to the extent of such conflict or inconsistency. Nothing in this Ninth Amendment shall be deemed a waiver or release of any unperformed obligations of Tenant under the Lease, including, without limitation, any delinquent rentals payable by Tenant. References in the Lease and this Ninth Amendment to "this Lease", "the Lease" or similar shall be a reference to the Lease as amended from time to time, including by this Ninth Amendment.

24. Confidentiality. Tenant will keep confidential (a) the terms of this Ninth Amendment, and (b) all negotiations and communications with Landlord and its representatives in connection with this Ninth Amendment (collectively, "Confidential Information"), and Tenant will not disclose or make available any Confidential Information to any other tenant in the Building or to any other person or entity, except (i) to Tenant's accountants, brokers, attorneys, and other agents for the sole purpose of providing advice to Tenant in connection with the Confidential Information and who agree to preserve the confidential nature of same, or (ii) as required by law.

25. Attorneys' Fees. If Landlord or Tenant brings any action against the other to enforce or interpret any provision of this Ninth Amendment (including any claim in a bankruptcy or an assignment for the benefit of creditors), the prevailing party will be entitled to recover from the other reasonable attorneys' fees, court costs and expenses incurred in such action.

26. Entire Agreement. This Ninth Amendment, including any exhibits attached hereto and any agreements referenced herein or therein, is deemed fully integrated and contains the entire agreement of the parties hereto with respect to the matters covered thereby, and other than as set forth in the Lease (and any related guaranty) which, as amended hereby is incorporated herein, no other agreement, statement or promise made by any party hereto or by any employee or agent of any party hereto, which is not contained herein, shall be binding or valid. All prior or contemporaneous agreements or writings between or among the parties are specifically merged into this Ninth Amendment. This Ninth Amendment may not be amended, modified or supplemented except by written instrument fully executed and delivered by Landlord and Tenant.

27. Execution and Delivery of Ninth Amendment. This Ninth Amendment shall not be effective, and Tenant shall have no rights or obligations hereunder, unless and until this Ninth Amendment has been executed by both Landlord and Tenant, and a copy of such fully-executed Ninth Amendment has been received by both Landlord and Tenant.

28. Exhibits. The following exhibits are attached to this Ninth Amendment and incorporated herein by reference:

EXHIBIT A: Outline of Ninth Amendment Surrendered Premises and Ninth Amendment Remaining Premises
EXHIBIT B: Ninth Amendment Work Letter

(Signatures on following page)

Landlord and Tenant have executed and delivered this Ninth Amendment to Office Lease effective as of the Effective Date.

LANDLORD:

BRI 1875 MERIDIAN, LLC,
a Delaware limited liability company

By: /s/ Mark Yacovetta
Name: Mark Yacovetta
Title: Director

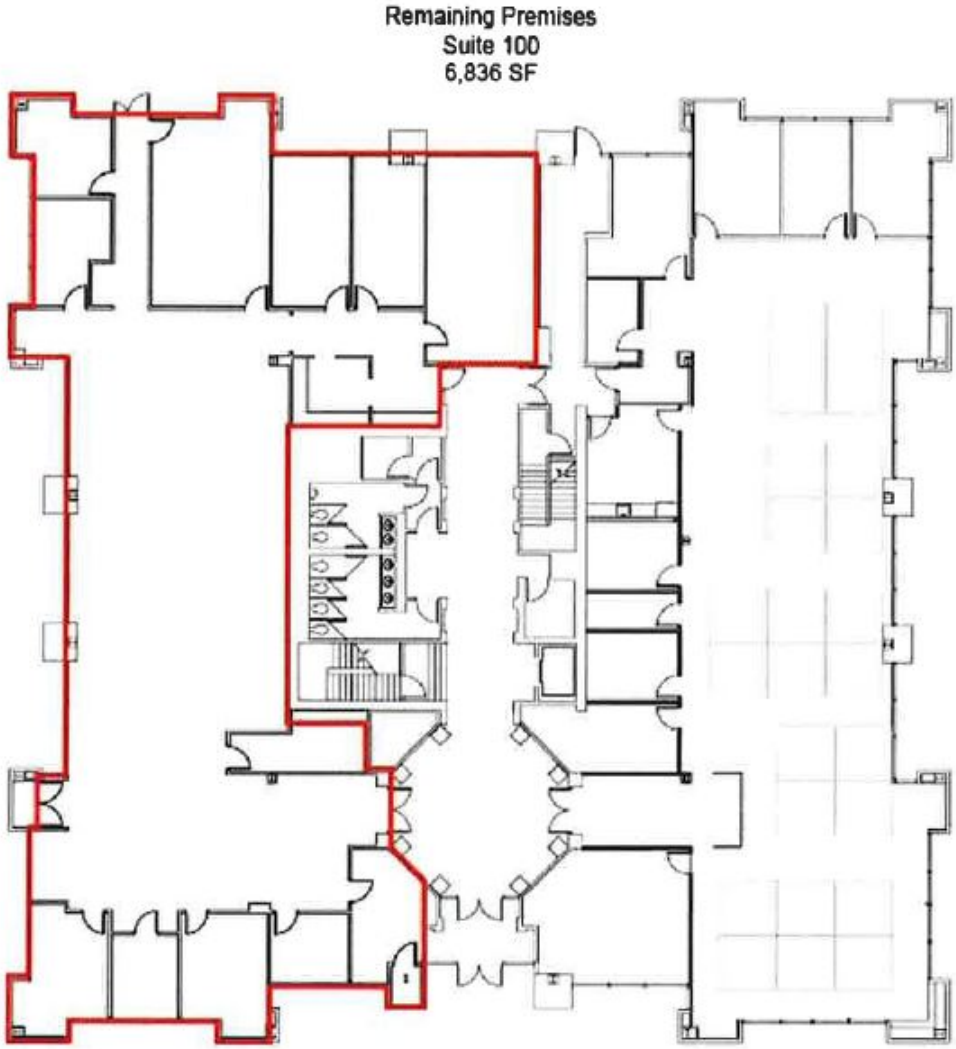
TENANT:

CHIMERIX, INC.,
a Delaware corporation

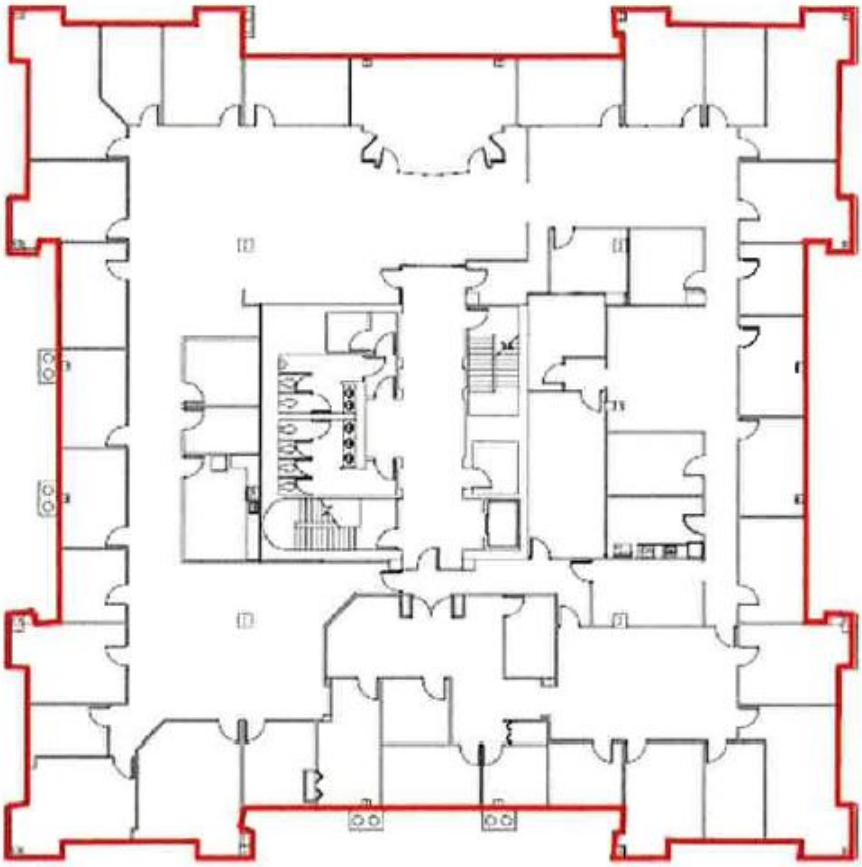
By: /s/ Mike Sherman
Name: Mike Sherman
Title: CEO

EXHIBIT A

OUTLINE OF NINTH AMENDMENT SURRENDERED PREMISES AND NINTH AMENDMENT REMAINING PREMISES



Remaining Premises
Suites 300 & 340
3,433 SF & 11,056 SF



Surrender Space
Suite 250
3,537 SF

EXHIBIT B

NINTH AMENDMENT WORK LETTER

Subject to the terms and conditions of this Ninth Amendment Work Letter and Article 9 of the Original Lease, Landlord will provide Tenant with the Refurbishment Allowance (as hereinafter defined) to be used towards Refurbishment Costs (as hereinafter defined) incurred and paid for by Tenant for refurbishments and leasehold improvements performed by Tenant in the Ninth Amendment Remaining Premises that are approved in advance in writing by Landlord (the "Refurbishments"). The "Refurbishment Allowance" means an amount of up to TEN AND NO/100 DOLLARS ($10.00) per RSF in the Ninth Amendment Remaining Premises (i.e. up to $213,250, based on 21,325 RSF in the Ninth Amendment Remaining Premises). Tenant's obligations under the Lease, as amended hereby (including, without limitation, Tenant's obligation to pay Rent), are not conditioned on the substantial completion of the Refurbishments by any particular time.

Any and all Refurbishments desired to be performed by Tenant require Landlord's prior written approval and consent, which shall not be unreasonably withheld, conditioned, or delayed, and all Refurbishments shall be performed in accordance with all applicable laws and codes. "Refurbishment Costs" mean, and shall be limited to, the costs incurred by Tenant for (i) the cost of all labor and materials and supplies incurred for the Refurbishments, and (ii) the cost of all contractor, architectural, engineering and design fees (including the costs incurred in connection with the preparation of any preliminary and final plans and construction documents) for the Refurbishments. Prior to commencement of construction of any Refurbishments, Tenant shall provide to Landlord detailed plans of such Refurbishments, including all architectural, mechanical and electrical working drawings (if applicable), prepared by licensed architects and professionals, and a construction budget for such Refurbishments detailing estimated Refurbishment Costs for such Refurbishments and a completion schedule. In connection with the Refurbishments, Tenant shall pay to Landlord a construction management fee in the amount of five percent (5%) of the total of all Refurbishment Costs (the "CM Fee"), which CM Fee shall be paid for from the Refurbishment Allowance; provided, however, that such CM Fee shall not be applicable to any Refurbishment Costs incurred by Tenant solely in connection with (A) the acquisition and installation of carpet in the Premises, and/or (B) any painting of the Premises. From time to time, but in no event more than once monthly, Tenant may submit requests to Landlord for reimbursement to Tenant for Refurbishment Costs paid by Tenant up to the then-available balance of the Refurbishment Allowance, such to be accompanied by invoices reflecting such costs and evidence of payment, including lien waivers, and such other documentation and evidence of payment as Landlord may reasonably require as a condition to reimbursement through the Refurbishment Allowance. Subject to the foregoing, Landlord shall disburse the requested amount to Tenant equal to the lesser of (a) the amount requested for disbursement, or (b) the then-available balance of the Refurbishment Allowance, within forty-five (45) days after receipt of Tenant's request (which must include all of the requirements set forth above) and provided that Landlord shall make disbursements of the Refurbishment Allowance only for Refurbishment Costs. Landlord shall not be obligated to make any disbursement of the Refurbishment Allowance during the pendency of any of the following: (1) Landlord has received written notice of any unpaid claims relating to any portion of any Refurbishments or other work by Tenant in the Ninth Amendment Remaining Premises or the Building, other than claims which will be paid in full from such disbursement or claims disputed by Tenant that are bonded or otherwise secured to Landlord's reasonable satisfaction, (2) there is an unbonded lien outstanding against the Building, the Ninth Amendment Remaining Premises, or Tenant's interest therein by reason of Refurbishments done, or claimed to have been done, or materials supplied or specifically fabricated, claimed to have been supplied or specifically fabricated, to the Ninth Amendment Remaining Premises or the Building in connection with the Refurbishments, (3) the conditions to the reimbursement are not satisfied, or (4) a Default by Tenant exists under the Lease, as amended hereby. Except as expressly provided in this Ninth Amendment Work Letter, Tenant shall be solely responsible for all Refurbishment Costs.

Landlord's agreement herein with respect to the performance of the Refurbishments and the Refurbishment Allowance is without limitation or waiver of the terms and conditions of Article 9 of the Original Lease, and except to the extent of any express conflict with this Ninth Amendment Work Letter, in which event this Ninth Amendment Work Letter shall govern, any Refurbishments performed by Tenant in the Ninth Amendment Remaining Premises, whether or not the cost of which may be reimbursed in whole or in part through the Refurbishment Allowance, are subject to all of the terms and conditions of Article 9 of the Original Lease and Tenant's strict compliance therewith (except to the extent of any express conflict with this Ninth Amendment Work Letter, in which event this Ninth Amendment Work Letter shall govern) and, in addition, are subject to compliance with all of the Building's rules and regulations in connection with contractors and contracted services in the Building, including contractor insurance requirements. Landlord shall be entitled to inspect the Refurbishments as they are constructed and when completed.

Tenant must obtain all permits, certificates, and other governmental approvals which are necessary for the construction of any Refurbishments. Prior to the start of construction of any Refurbishments, Tenant shall provide to Landlord the name and address of each contractor and subcontractor which Tenant intends to employ to perform such Refurbishments, and the contractors or subcontractors shall be subject to Landlord's prior written approval, which approval shall not be unreasonably withheld, conditioned, or delayed. Prior to the start of construction of any Refurbishments, Tenant shall deliver to Landlord a certificate of insurance from each contractor and subcontractor, stating insurance coverages and with such insurers as shall be approved by Landlord.

If (i) there exists no Default by Tenant under the Lease, as amended hereby, and (ii) there remains an unused portion of the Refurbishment Allowance after payment of all Refurbishment Costs, then upon Tenant's written request given to Landlord no later than the date that is eighteen (18) months from and after the Effective Date of this Ninth Amendment, such unused portion of the Refurbishment Allowance, but not more than an amount equal to FIVE AND NO/100 DOLLARS ($5.00) per RSF in the Ninth Amendment Remaining Premises (i.e. up to $106,625, based on 21,325 RSF in the Ninth Amendment Remaining Premises), shall be applied by Landlord against Base Rent next coming due under the Lease, as amended hereby (but not towards any other Rent). Notwithstanding anything contained in the Lease or this Ninth Amendment to the contrary, if on the date that is eighteen (18) months from and after the Effective Date of this Ninth Amendment, there remains any unfunded balance of the Refurbishment Allowance not then subject to a pending application for reimbursement of Refurbishment Costs, or application towards Base Rent pursuant to the provisions of this paragraph, then Landlord shall have no further obligation to disburse such balance and Tenant shall have no further rights thereto.

SECOND AMENDMENT TO INDUSTRIAL BUILDING LEASE

This Second Amendment to Industrial Building Lease (this "**Amendment**") is dated to be effective as of July 30, 2020 (the "**Effective Date**"), by and between CLPF- RESEARCH CENTER, LLC, a Delaware limited liability company, successor-in-interest to NORTHWOOD RTC LLC, a Delaware limited liability company ("**Landlord**"), and CHIMERIX, INC., a Delaware corporation ("**Tenant**").

R E C I T A L S

WHEREAS, Landlord and Tenant entered into that certain Industrial Building Lease dated March 10, 2014 (the "**Original Lease**"), as amended by that certain First Amendment to Industrial Building Lease dated December 14, 2017 (the "**First Amendment**", with the Original Lease and the First Amendment being collectively hereinafter referred to as the "**Lease**"), for the leasing of approximately 7,925 square feet of space known as Suite E (the "**Premises**") in the building commonly known as Research Tri-Center North I, located at 3501 Tri-Center Boulevard, Durham, North Carolina 27713 (the "**Building**"), which Building is part of that certain industrial project commonly known as Research Tri-Center (the "**Project**"), as more particularly described in the Lease; and

WHEREAS, Tenant and Landlord desire to modify the Lease pursuant to the terms herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the parties and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, it is the sole intent of Landlord and Tenant to hereby amend the Lease as follows:

1. **Extension of Lease Term and Base Rent**. Landlord and Tenant acknowledge and agree that, pursuant to the First Amendment, the Lease Term expires on July 31, 2021, however, Landlord and Tenant hereby agree to extend the Lease Term for a period of sixty (60) months, commencing on August 1, 2021 (the "**Extension Commencement Date**") and expiring on July 31, 2026, and the Base Rent during such extension shall be as follows:

Months	Annual Base Rent Rate Per Sq. Ft.	Annual Base Rent	Monthly Installment of Base Rent
August 1, 2021 – July 31, 2022	$21.00	$166,425.00	$13,868.75
August 1, 2022 – July 31, 2023	$21.63	$171,417.75	$14,284.81
August 1, 2023 – July 31, 2024	$22.28	$176,569.00	$14,714.08
August 1, 2024 – July 31, 2025	$22.95	$181,878.75	$15,156.56
August 1, 2025 – July 31, 2026	$23.64	$187,347.00	$15,612.25

Except as expressly amended or modified in this Amendment, Tenant will continue to pay all rent, including monthly Base Rent, Additional Rent and all other charges and expenses pursuant to the applicable terms and conditions of the Lease.

2. **AS IS Condition of Premises**. (a) Except as expressly set forth in Section 2(b) below, Tenant accepts the Premises (including, without limitation, all equipment, fixtures, systems and racking therein), the Building, the Common Areas and the Project in their **AS IS, WHERE IS, WITH ALL FAULTS** condition and state of repair existing as of the Effective Date, and Tenant agrees that Landlord shall not be required to perform any work, supply any materials, or incur any expense to prepare the Premises for Tenant's occupancy, provided, however, nothing herein shall relieve Landlord of its obligations under Section 8 of the Original Lease. Tenant shall, at its sole cost and expense, be solely responsible to obtain any and all licenses, permits and/or consents, if any, related to its use and occupancy of the Premises.

(b) Notwithstanding Tenant's obligations to maintain, repair and/or replace any portion of the Premises, and provided that no Event of Default under the Lease has occurred (beyond any applicable notice and/or cure period set forth in the Lease), Landlord agrees to reimburse Tenant up to $33,950.00 (the "**HVAC Allowance**"), which HVAC Allowance may be used for Tenant's costs and expenses incurred in connection with the maintenance, replacement and repair of the heating, ventilation and air conditioning system described in the scope of work attached hereto as **Exhibit A** (the "**HVAC Work**"). The HVAC Work described on **Exhibit A** and the proposal and contractor specified thereon are hereby approved by Landlord. The performance of the HVAC Work shall be subject to all of the provisions of the Lease, including, but not limited to, Section 8 of the Original Lease. Tenant must perform the HVAC Work and submit to Landlord a proper Payment Request (hereinafter defined) relating to the HVAC Work within ninety (90) days after the Effective Date, or else Tenant's right to receive the HVAC Allowance shall be null and void, and Tenant shall not be entitled to any rent offsets or credits for any unused HVAC Allowance; provided, however, if the completion of the HVAC Work is delayed due to force majeure or other reason beyond the control of Tenant or there is any dispute about the completion of the HVAC Work or the billing and the payment for the HVAC Work is delayed, the period for submission of a Payment Request shall be extended until ten days following the last date of the payment(s) to the contractor for which the Payment Request is made, but in no event shall the proper Payment Request be submitted to Landlord after June 30, 2021. If the total cost to perform the HVAC Work is less than the HVAC Allowance, then Landlord shall make any unused HVAC Allowance available to Tenant for other improvements in the Premises, provided they are made within forty-five (45) days from the date of the Payment Request for the HVAC Work (and any such other improvements shall be subject to all of the provisions of the Lease, including, but not limited to, Section 8 of the Original Lease). If the total cost to perform the HVAC Work is greater than the HVAC Allowance, then Tenant shall pay all such excess costs and Landlord shall have no liability therefor. Tenant shall be fully responsible to perform all of the HVAC Work. Tenant shall be solely responsible to ensure that the HVAC Work is in compliance with all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Premises.

(c) The entire cost of performing the HVAC Work shall be paid by Tenant (but subject to the HVAC Allowance). No advance of the HVAC Allowance shall be made by Landlord until Tenant has first paid the cost of the HVAC Work to the contractor(s), vendors, installers, design professionals, and the like, from its own funds (and provided reasonable

evidence thereof to Landlord). Thereafter, subject to the terms herein, Landlord shall pay to Tenant the HVAC Allowance in one disbursement following the receipt by Landlord of the following items: (i) a request for payment and related invoices, and (ii) final lien waivers from all persons performing work or supplying or fabricating materials for the HVAC Work, fully executed, acknowledged and in recordable form (with all of the foregoing being collectively hereinafter referred to as the "**Payment Request**"). Subject to the terms herein, upon final completion of the HVAC Work, but prior to paying to Tenant any of the HVAC Allowance, Landlord and Tenant will inspect the HVAC Work and, subject to Landlord's and Tenant's review and approval of same, Landlord's approval not to be unreasonably withheld, conditioned or delayed, Landlord shall pay the amount stated in the Payment Request (up to the amount of the HVAC Allowance) within thirty (30) days following Tenant's submission of the Payment Request that satisfies all of the provisions of Section 8 of the Original Lease and this Section.

1. **Renewal Option**. Landlord and Tenant hereby acknowledge and agree that Tenant shall have the right to renew the Lease for one (1) additional period of five (5) years beginning August 1, 2026 in accordance with the terms and provisions of Section 2 of the First Amendment (for avoidance of doubt, Landlord and Tenant acknowledge and agree that from and after the Extension Commencement Date, Tenant shall have a total of one (1) renewal option for a period of five (5) years to commence on August 1, 2026). Except as expressly set forth herein, Tenant shall not have any other rights or options to extend the Lease Term or renew the Lease.

2. **Release of Landlord**. Tenant, for itself and on behalf of its owners, employees, officers, subsidiaries and divisions, hereby waives and releases any and all known claims and causes of action, if any, which it has or may have against Landlord or any of its agents arising out of or in any way related to, directly or indirectly, the Lease and this Amendment, and/or the operation or condition of the Project, the Building and/or the Premises.

3. **Brokers**. Landlord and Tenant represent and warrant that they have dealt with no broker, agent or other person in connection with this transaction except for Davis Moore Capital, who represents Tenant (the "**Tenant's Broker**"), and Foundry Commercial, who represents Landlord (the "**Landlord's Broker**"), and except for the Tenant's Broker and Landlord's Broker, no other broker, agent or other person brought about this transaction. Landlord agrees to pay a commission to the Tenant's Broker and the Landlord's Broker pursuant to a separate written agreement(s) between Landlord, Tenant's Broker, and Landlord's Broker. Landlord and Tenant hereby indemnify and hold each other harmless against any loss, claim, expense or liability with respect to any commissions or brokerage fees claimed by any broker or finder other than the Tenant's Broker and Landlord's Broker on account of the execution of this Amendment and the transactions contemplated herein due to any action of the indemnifying party.

4. **Miscellaneous.** Landlord and Tenant represent each to the other that it has full right and authority to enter into this Amendment. All other terms and conditions of the Lease, except as specifically amended or modified by this Amendment, shall remain in effect and unchanged. All terms used herein having initial capital letters and not otherwise herein defined shall have the meaning ascribed to such terms in the Lease, and effective as of the Effective Date, any defined terms in the Lease that are also defined herein, shall be replaced with the defined terms in this Amendment. If any conflict exists between the provisions in this

Amendment and the remaining terms of the Lease, then this Amendment controls. The Lease, including this Amendment, constitutes the entire agreement of the Landlord and Tenant with respect to the subject matter of the Lease and this Amendment, and contains all of the covenants and agreements of Landlord and Tenant with respect thereto. The recitals set forth above are true and correct and are hereby incorporated herein by this reference. Landlord and Tenant each acknowledge that no representations, inducements, promises or agreements, oral or written, have been made by Landlord or Tenant, or anyone acting on behalf of Landlord or Tenant, which are not contained herein, and any prior agreements, promises, negotiations, or representations not expressly set forth in this Amendment are of no effect. This Amendment may not be altered, changed or amended except by an instrument in writing signed by both parties hereto. Except as modified in this Amendment, Landlord and Tenant hereby ratify and confirm all provisions of the Lease. Accordingly, the parties agree that the Lease remains in full force and effect with the exception of the lease terms and obligations that are amended herein.

(Signatures are on the following page.)

Signature page to SECOND AMENDMENT TO INDUSTRIAL BUILDING LEASE

This Amendment is dated to be effective as of the date first written above.

TENANT: CHIMERIX, INC.,
a Delaware corporation

By: /s/ Michael Sherman Name: Michael Sherman Title: President and CEO

LANDLORD: CLPF-RESEARCH CENTER, LLC,
a Delaware limited liability company

By: Clarion Lion Properties Fund Holdings, L.P., its sole member

By: CLPF-Holdings, LLC, its general partner

By: Clarion Lion Properties Fund Holdings REIT, LLC, its sole member

By: Clarion Lion Properties Fund, LP, its managing member

By: Clarion Partners LPF GP, LLC, its general partner By: Clarion Partners, LLC, its sole member

By: /s/ Ryan J Bandy Name: Ryan J Bandy Title: Senior Vice President

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

EXHIBIT A

HVAC WORK

[*]

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael A. Sherman, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the three months ended June 30, 2020 of Chimerix, 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

Date: August 10, 2020

/s/ Michael A. Sherman

Michael A. Sherman

President & Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF THE CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael T. Andriole, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the three months ended June 30, 2020 of Chimerix, 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

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

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

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

Date: August 10, 2020

/s/ Michael T. Andriole

Michael T. Andriole

Chief Business and Financial Officer

Exhibit 32.1

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

In connection with the Quarterly Report on Form 10-Q of Chimerix, Inc. (the "Company") for the period ended June 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael A. Sherman, as Principal Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

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

Date: August 10, 2020

/s/ Michael A. Sherman

Michael A. Sherman

President & Chief Executive Officer

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing. A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

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

In connection with the Quarterly Report on Form 10-Q of Chimerix, Inc. (the "Company") for the period ended June 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael T. Andriole, as Principal Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

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

Date: August 10, 2020

/s/ Michael T. Andriole

Michael T. Andriole

Chief Business and Financial Officer

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. § 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing. A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.