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

FORM 10-Q

Quarterly Report Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

For the quarterly period ended March 31, 2020

Commission File Number 000-23186

BIOCRYST PHARMACEUTICALS, INC.
(Exact name of registrant as specified in its charter)

DELAWARE **(State of other jurisdiction of incorporation or organization)**	**62-1413174** **(I.R.S. Employer Identification No.)**
4505 Emperor Blvd., Suite 200 **Durham, North Carolina** **(Address of principal executive offices)**	**27703** **(Zip Code)**

(919) 859-1302
(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	BCRX	Nasdaq global select market

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

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

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

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

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

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

The number of shares of Common Stock, par value $0.01, of the Registrant outstanding as of April 30, 2020 was 154,253,225.

BIOCRYST PHARMACEUTICALS, INC.

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

BIOCRYST PHARMACEUTICALS, INC.
CONSOLIDATED BALANCE SHEETS
March 31, 2020 and December 31, 2019
(In thousands, except per share data)

	2020 (Unaudited)	2019 (Note 1)
Assets		
Cash and cash equivalents	$ 101,873	$ 114,172
Restricted cash	1,559	1,551
Investments	11,185	22,054
Receivables from collaborations	5,642	22,146
Prepaid expenses and other current assets	5,249	4,422
Total current assets	125,508	164,345
Property and equipment, net	7,270	7,347
Other assets	3,811	3,590
Total assets	$ 136,589	$ 175,282
Liabilities and Stockholders' Equity		
Accounts payable	$ 10,061	$ 13,988
Accrued expenses	20,192	21,365
Interest payable	16,381	14,904
Deferred collaboration revenue	1,067	2,120
Lease financing obligation	1,301	1,377
Senior credit facility	14,026	9,020
Non-recourse notes payable	29,671	29,561
Total current liabilities	92,699	92,335
Lease financing obligation	3,729	3,406
Senior credit facility	36,513	41,289
Stockholders' equity:		
Preferred stock, $0.001 par value; shares authorized - 5,000; no shares issued and outstanding	-	-
Common stock, $0.01 par value: shares authorized - 200,000; shares issued and outstanding – 154,192 in 2020 and 154,082 in 2019	1,542	1,541
Additional paid-in capital	880,319	877,300
Accumulated other comprehensive income	14	39
Accumulated deficit	(878,227)	(840,628)
Total stockholders' equity	3,648	38,252
Total liabilities and stockholders' equity	$ 136,589	$ 175,282

See accompanying notes to consolidated financial statements.

BIOCRYST PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
Three Months Ended March 31, 2020 and 2019
(In thousands, except per share data-Unaudited)

	2020	2019
Revenues		
Product sales	$ 218	$ 1,679
Royalty revenue	1,945	2,322
Collaborative and other research and development	2,660	1,886
Total revenues	4,823	5,887
Expenses		
Cost of product sales	-	1,399
Research and development	29,867	27,493
Selling, general and administrative	15,865	6,238
Royalty	69	87
Total operating expenses	45,801	35,217
Loss from operations	(40,978)	(29,330)
Interest and other income	6,446	596
Interest expense	(3,047)	(2,726)
(Loss) gain on foreign currency derivative	(20)	406
Net loss	$ (37,599)	$ (31,054)
Unrealized (loss) gain on available for sale investments	(25)	208
Net comprehensive loss	$ (37,624)	$ (30,846)
Basic and diluted net loss per common share	**$ (0.24)**	**$ (0.28)**
Weighted average shares outstanding	**154,156**	**110,167**

See accompanying notes to consolidated financial statements.

BIOCRYST PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
Three Months Ended March 31, 2020 and 2019
(In thousands-Unaudited)

	2020	2019
Operating activities		
Net loss	$ (37,599)	$ (31,054)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	218	176
Stock-based compensation expense	2,754	3,317
Amortization of debt issuance costs	341	255
Amortization of premium/discount on investments	4	(62)
Change in fair value of foreign currency derivative	20	(406)
Deferred revenue	(1,053)	-
Changes in operating assets and liabilities:		
Receivables	16,504	(709)
Prepaid expenses and other assets	(847)	1,370
Accounts payable and accrued expenses	(5,100)	(1,429)
Interest payable	1,477	1,544
Net cash used in operating activities	**(23,281)**	**(26,998)**
Investing activities		
Acquisitions of property and equipment	(116)	(93)
Purchases of investments	-	(3,018)
Sales and maturities of investments	10,840	18,992
Net cash provided by investing activities	**10,724**	**15,881**
Financing activities		
Proceeds from senior credit facility	-	19,477
Net proceeds from common stock issued under stock-based compensation plans	266	563
Net cash provided by financing activities	**266**	**20,040**
Increase (decrease) in cash, cash equivalents and restricted cash	**(12,291)**	**8,923**
Cash, cash equivalents and restricted cash at beginning of period	115,723	28,275
Cash, cash equivalents and restricted cash at end of period	**$ 103,432**	**$ 37,198**

See accompanying notes to consolidated financial statements.

BIOCRYST PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS STOCKHOLDERS' EQUITY (DEFICIT)
Three Months Ended March 31, 2019 and 2018

(In thousands, except per share amounts-Unaudited)

	Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance at December 31, 2019	**$ 1,541**	**$ 877,300**	**$ 39**	**$ (840,628)**	**$ 38,252**
Net loss	-	-	-	(37,599)	(37,599)
Other comprehensive loss	-	-	(25)	-	(25)
Employee stock purchase plan sales, 110 shares, net	1	265	-	-	266
Stock-based compensation expense	-	2,754	-	-	2,754
Balance at March 31, 2020	**$ 1,542**	**$ 880,319**	**$ 14**	**$ (878,227)**	**$ 3,648**

	Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance at December 31, 2018	**$ 1,101**	**$ 780,400**	**$ (297)**	**$ (731,969)**	**$ 49,235**
Impact to retained earnings from adoption of ASC 842	-	-	-	238	238
Net loss	-	-	-	(31,054)	(31,054)
Other comprehensive income	-	-	208	-	208
Exercise of stock options, 160 shares, net	2	341	-	-	343
Employee stock purchase plan sales, 47 shares, net	-	220	-	-	220
Stock-based compensation expense	-	3,317	-	-	3,317
Balance at March 31, 2019	**$ 1,103**	**$ 784,278**	**$ (89)**	**$ (762,785)**	**$ 22,507**

See accompanying notes to consolidated financial statements.

Note 1 - Significant Accounting Policies

The Company

BioCryst Pharmaceuticals, Inc. (the “Company”) is a biotechnology company that discovers novel, oral, small-molecule medicines. The Company focuses on the treatment of rare diseases in which significant unmet medical needs exist and an enzyme plays the key role in the biological pathway of the disease. The Company was incorporated in Delaware in 1986 and its headquarters is located in Durham, North Carolina. The Company integrates the disciplines of biology, crystallography, medicinal chemistry and computer modeling to discover and develop small molecule pharmaceuticals through the process known as structure-guided drug design. BioCryst has incurred losses and negative cash flows from operations since inception.

With the funds available at March 31, 2020, the Company believes these resources will be sufficient to fund its operations into 2021. The Company has sustained operating losses for the majority of its corporate history and expects that its 2020 expenses will exceed its 2020 revenues. The Company expects to continue to incur operating losses and negative cash flows until revenues reach a level sufficient to support ongoing operations. Accordingly, its planned operations raise doubt about its ability to continue as a going concern through 2021. The Company’s liquidity needs will be largely determined by the success of operations in regards to the progression of its product candidates in the future. The Company also may consider other plans to fund operations through 2021 including: (1) securing or increasing U.S. Government funding of its programs, including obtaining procurement contracts; (2) out-licensing rights to certain of its products or product candidates, pursuant to which the Company would receive cash milestones; (3) raising additional capital through equity or debt financings or from other sources; (4) obtaining additional product candidate regulatory approvals, which would generate revenue, milestones and cash flow; (5) reducing spending on one or more research and development programs, including by discontinuing development; and/or (6) restructuring operations to change its overhead structure. The Company may issue securities, including common stock, preferred stock, depositary shares, stock purchase contracts, warrants and units, through private placement transactions or registered public offerings in the future. The Company’s future liquidity needs, and ability to address those needs, will largely be determined by the success of its product candidates, timing, scope and magnitude of its commercial expenses and key development and regulatory events and its decisions in the future.

Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, JPR Royalty Sub LLC (“Royalty Sub”) and MDCP, LLC (“MDCP”). Both subsidiaries were formed to facilitate financing transactions for the Company. Royalty Sub was formed in connection with a $30,000 financing transaction the Company completed on March 9, 2011. See Note 4, Royalty Monetization, for a further description of this transaction. MDCP was formed in connection with a $23,000 senior credit facility that the Company closed on September 23, 2016 and subsequently amended and restated on each of July 20, 2018 and February 5, 2019. See Note 5 for a further description of these transactions. All intercompany transactions and balances have been eliminated.

The Company’s consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (“U.S. GAAP”) for interim financial reporting and the instructions to Form 10-Q and do not include all of the information and footnotes required by U.S. GAAP for complete financial statements. Such financial statements reflect all adjustments that are, in management’s opinion, necessary to present fairly, in all material respects, the Company’s consolidated financial position, results of operations, and cash flows. There were no adjustments other than normal recurring adjustments.

These financial statements should be read in conjunction with the financial statements for the year ended December 31, 2019 and the notes thereto included in the Company’s 2019 Annual Report on Form 10-K. Interim operating results are not necessarily indicative of operating results for the full year. The balance sheet as of December 31, 2019 has been derived from the audited consolidated financial statements included in the Company’s most recent Annual Report on Form 10-K.

Cash and Cash Equivalents

The Company generally considers cash equivalents to be all cash held in commercial checking accounts, certificates of deposit, money market accounts or investments in debt instruments with maturities of three months or less at the time of purchase. The carrying value of cash and cash equivalents approximates fair value due to the short-term nature of these items.

Restricted Cash

Restricted cash as of March 31, 2020 and December 31, 2019 reflects $134 in royalty revenue paid by Shionogi & Co., Ltd. (“Shionogi”) designated for interest on the PhaRMA Notes (defined in Note 4) and $1,425 and $1,417, respectively, the Company is required to maintain as collateral for a letter of credit associated with the lease execution and build-out of its Birmingham research facilities.

Investments

The Company invests in high credit quality investments in accordance with its investment policy, which is designed to minimize the possibility of loss. The objective of the Company’s investment policy is to ensure the safety and preservation of invested funds, as well as maintaining liquidity sufficient to meet cash flow requirements. The Company places its excess cash with high credit quality financial institutions, commercial companies, and government agencies in order to limit the amount of its credit exposure. In accordance with its policy, the Company is able to invest in marketable debt securities that may consist of U.S. Government and government agency securities, money market and mutual fund investments, municipal and corporate notes and bonds, commercial paper and asset or mortgage-backed securities, among others. The Company’s investment policy requires it to purchase high-quality marketable securities with a maximum individual maturity of three years and requires an average portfolio maturity of no more than 18 months. Some of the securities the Company invests in may have market risk. This means that a change in prevailing interest rates may cause the principal amount of the investment to fluctuate. To minimize this risk, the Company schedules its investments with maturities that coincide with expected cash flow needs, thus avoiding the need to redeem an investment prior to its maturity date. Accordingly, the Company does not believe it has a material exposure to interest rate risk arising from its investments. Generally, the Company’s investments are not collateralized. The Company has not realized any significant losses from its investments.

The Company classifies all of its investments as available-for-sale. Unrealized gains and losses on investments are recognized in comprehensive loss, unless an unrealized loss is considered to be other than temporary, in which case the unrealized loss is charged to operations. The Company periodically reviews its investments for other than temporary declines in fair value below cost basis and whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. The Company believes the individual unrealized losses represent temporary declines primarily resulting from interest rate changes. Realized gains and losses are reflected in interest and other income in the Consolidated Statements of Comprehensive Loss and are determined using the specific identification method with transactions recorded on a settlement date basis. Investments with original maturities at date of purchase beyond three months and which mature at or less than 12 months from the balance sheet date are classified as current. Investments with a maturity beyond 12 months from the balance sheet date are classified as long-term. At March 31, 2020, the Company believes that the cost of its investments is recoverable in all material respects.

The following tables summarize the fair value of the Company’s investments by type. The estimated fair values of the Company’s fixed income investments are classified as Level 2 in the fair value hierarchy as defined in U.S. GAAP. These valuations are based on observable direct and indirect inputs, primarily quoted prices of similar, but not identical, instruments in active markets or quoted prices for identical or similar instruments in markets that are not active. These fair values are obtained from independent pricing services which utilize Level 2 inputs.

	March 31, 2020				
	Amortized Cost	**Accrued Interest**	**Gross Unrealized Gains**	**Gross Unrealized Losses**	**Estimated Fair Value**
Obligations of the U.S. Government and its agencies	$ 4,501	$ 44	$ 8	$ -	$ 4,553
Corporate debt securities	5,387	52	2	(1)	5,440
Certificates of deposit	1,180	7	5	-	1,192
Total investments	$ 11,068	$ 103	$ 15	$ (1)	$ 11,185

	December 31, 2019				
	Amortized Cost	**Accrued Interest**	**Gross Unrealized Gains**	**Gross Unrealized Losses**	**Estimated Fair Value**
Obligations of U.S. Government and its agencies	$ 10,488	$ 50	$ 23	$ -	$ 10,561
Corporate debt securities	9,742	59	10	(1)	9,810
Certificates of deposit	1,669	7	7	-	1,683
Total investments	$ 21,899	$ 116	$ 40	$ (1)	$ 22,054

Receivables from Collaborations

Receivables from collaborations are recorded for amounts due to the Company related to reimbursable research and development costs from the U.S. Department of Health and Human Services, royalty receivables from Shionogi, Green Cross Corporation ("Green Cross"), Mundipharma International Holdings Limited ("Mundipharma") and Seqirus UK Limited ("SUL"), and product sales to SUL. These receivables are evaluated to determine if any reserve or allowance should be established at each reporting date.

At March 31, 2020 and December 31, 2019, the Company had the following receivables.

	March 31, 2020		
	Billed	**Unbilled**	**Total**
U.S. Department of Health and Human Services	$ -	$ 2,343	$ 2,343
Shionogi & Co. Ltd.	1,679	3	1,682
Green Cross Corporation	1,186	8	1,194
Mundipharma International Holdings Limited	18	-	18
Seqirus UK Limited	405	-	405
Total receivables	$ 3,288	$ 2,354	$ 5,642

	December 31, 2019		
	Billed	**Unbilled**	**Total**
U.S. Department of Health and Human Services	$ 1,353	$ 15,023	$ 16,376
Shionogi & Co. Ltd.	1,336	4	1,340
Green Cross Corporation	2,924	8	2,932
Mundipharma International Holdings Limited	56	-	56
Seqirus UK Limited	1,091	351	1,442
Total receivables	$ 6,760	$ 15,386	$ 22,146

Monthly invoices are submitted to the U.S. Department of Health and Human Services related to reimbursable research and development costs. The Company is also entitled to monthly reimbursement of indirect costs based on rates stipulated in the underlying contract. The Company's calculations of its indirect cost rates are subject to audit by the U.S. Government.

Receivables from Product Sales

Receivables from product sales are recorded for amounts due to the Company related to sales of RAPIVAB. These receivables are evaluated to determine if any reserve or allowance should be established at each reporting date.

Inventory

Inventory is stated at the lower of cost and net realizable value, determined under the first-in, first-out ("FIFO") method, or market. The Company expenses costs related to the production of inventories as research and development expenses in the period incurred until such time it is believed that future economic benefit is expected to be recognized, which generally is reliant upon receipt of regulatory approval. Upon regulatory approval, the Company will capitalize subsequent costs related to the production of inventories.

Property and Equipment

Property and equipment are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Computer equipment is depreciated over a life of three years. Laboratory equipment, office equipment, and software are depreciated over a life of five years. Furniture and fixtures are depreciated over a life of seven years. Leasehold improvements are amortized over their estimated useful lives or the expected lease term, whichever is less.

In accordance with U.S. GAAP, the Company periodically reviews its property and equipment for impairment when events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. In the event that such cash flows are not expected to be sufficient to recover the carrying amount of the assets, the assets are written down to their estimated fair values. Property and equipment to be disposed of are reported at the lower of carrying amount or fair value less cost to sell.

Patents and Licenses

The Company seeks patent protection on all internally developed processes and products. All patent related costs are expensed to general and administrative expenses when incurred as recoverability of such expenditures is uncertain.

Accrued Expenses

The Company generally enters into contractual agreements with third-party vendors who provide research and development, manufacturing, and other services in the ordinary course of business. Some of these contracts are subject to milestone-based invoicing and services are completed over an extended period of time. The Company records liabilities under these contractual commitments when it determines an obligation has been incurred, regardless of the timing of the invoice. This process involves reviewing open contracts and purchase orders, communicating with applicable Company personnel to identify services that have been performed on its behalf and estimating the level of service performed and the associated cost incurred for the service when the Company has not yet been invoiced or otherwise notified of actual cost. The majority of service providers invoice the Company monthly in arrears for services performed. The Company makes estimates of accrued expenses as of each balance sheet date in its financial statements based on the facts and circumstances. The Company periodically confirms the accuracy of its estimates with the service providers and makes adjustments if necessary. Examples of estimated accrued expenses include:

- fees paid to Clinical Research Organizations (“CROs”) in connection with preclinical and toxicology studies and clinical trials;

- fees paid to investigative sites in connection with clinical trials;

- fees paid to contract manufacturers in connection with the production of the Company’s raw materials, drug substance and drug products; and

- professional fees.

The Company bases its expenses related to clinical trials on its estimates of the services received and efforts expended pursuant to contracts with multiple research institutions and CROs that conduct and manage clinical trials on the Company’s behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, the Company estimates the time period over which services will be performed and the level of effort expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, the Company will adjust the accrual accordingly. As of March 31, 2020 and December 31, 2019, the carrying value of accrued expenses approximates their fair value due to their short-term settlement.

Income Taxes

The liability method is used in the Company’s accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse.

Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss is comprised of unrealized gains and losses on available-for-sale investments and is disclosed as a separate component of stockholders’ equity. Amounts reclassified from accumulated other comprehensive loss are recorded as interest and other income on the Consolidated Statements of Comprehensive Loss. No reclassifications out of accumulated other comprehensive loss were recorded during the three months ended March 31, 2020 or March 31, 2019.

Revenue Recognition

Collaborative and Other Research and Development Arrangements and Royalties

The Company recognizes revenue when it satisfies a performance obligation by transferring promised goods or services to a customer. Revenue is measured at the transaction price that is based on the amount of consideration that the Company expects to receive in exchange for transferring the promised goods or services to the customer. The transaction price includes estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur.

The Company has collaboration and license agreements with a number of third parties as well as research and development agreements with certain government entities. The Company’s primary sources of revenue are license, service, royalty and product sale revenues from these collaborative and other research and development arrangements.

Revenue from license fees, royalty payments, milestone payments, and research and development fees are recognized as revenue when the earnings process is complete and the Company has no further continuing performance obligations or the Company has completed the performance obligations under the terms of the agreement.

Arrangements that involve the delivery of more than one performance obligation are initially evaluated as to whether the intellectual property licenses granted by the Company represent distinct performance obligations. If they are determined to be distinct, the value of the intellectual property licenses would be recognized up-front while the research and development service fees would be recognized as the performance obligations are satisfied. For performance obligations based on services performed, the Company measures progress using an input method based on the effort we expend or costs we incur toward the satisfaction of performance obligation in relation to the total estimated effort or costs. Variable consideration is assessed at each reporting period as to whether it is not subject to significant future reversal and, therefore, should be included in the transaction price at the inception of the contract. If a contract includes a fixed or minimum amount of research and development support, this also would be included in the transaction price. Changes to collaborations, such as the extensions of the research term or increasing the number of targets or technology covered under an existing agreement, are assessed for whether they represent a modification or should be accounted for as a new contract. For contracts with multiple performance obligations, revenue is allocated to each performance obligation based on its relative standalone selling price. Standalone selling prices are based on observable prices at which the Company separately sells the products or services. If a standalone selling price is not directly observable, then the Company estimates the standalone selling price using either an adjusted market assessment approach or an expected cost plus margin approach, representing the amount that the Company believes the market is willing to pay for the product or service. Analyzing the arrangement to identify performance obligations requires the use of judgment, and each may be an obligation to deliver services, a right or license to use an asset, or another performance obligation.

Milestone payments are recognized as licensing revenue upon the achievement of specified milestones if (i) the milestone is substantive in nature and the achievement of the milestone was not probable at the inception of the agreement; and (ii) the Company has a right to payment. Any milestone payments received prior to satisfying these revenue recognition criteria are recorded as deferred revenue.

Reimbursements received for direct out-of-pocket expenses related to research and development costs are recorded as revenue in the Consolidated Statements of Comprehensive Loss rather than as a reduction in expenses. Under the Company’s contracts with the Biomedical Advanced Research and Development Authority within the United States Department of Health and Human Services (”BARDA/HHS”) and the National Institute of Allergy and Infectious Diseases (“NIAID/HHS”), revenue is recognized as reimbursable direct and indirect costs are incurred.

Under certain of the Company’s license agreements, the Company receives royalty payments based upon its licensees’ net sales of covered products. Royalties are recognized at the later of when (i) the subsequent sale or usage occurs, or (ii) the performance obligation to which some or all of the sales-based or usage-based royalty has been satisfied.

Product Sales

The Company’s principal sources of product sales are sales of peramivir to our licensing partners and sales of RAPIVAB to the U.S. Department of Health and Human Services under the Company’s procurement contract. The Company recognizes revenue for sales when the customer obtains control of the product, which generally occurs upon delivery.

The Company recorded the following revenues for the three months ended March 31, 2020 and 2019:

	2020	**2019**
Product sales	$ 218	$ 1,679
Royalty revenues	1,945	2,322
Collaborative and other research and development revenues:		
U.S. Department of Health and Human Services	1,607	1,886
Torii Pharmaceutical Co., Ltd.	1,053	-
Total collaborative and other research and development revenues	2,660	1,886
Total revenues	$ 4,823	$ 5,887

Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets) and deferred revenue and billings in excess of revenue recognized (contract liabilities) on the Consolidated Balance Sheets.

Contract assets - The Company's long-term contracts, typically the government research and development contracts, are billed as work progresses in accordance with the contract terms and conditions, either at periodic intervals or upon achievement of certain milestones. Often this results in billing occurring subsequent to revenue recognition resulting in contract assets. Contract assets are generally classified as current assets in the Consolidated Balance Sheet.

Contract liabilities - The Company often receives cash payments from customers in advance of the Company's performance resulting in contract liabilities. These contract liabilities are classified as either current or long-term in the Consolidated Balance Sheet based on the timing of when the Company expects to recognize the revenue.

Contract Costs

The Company may incur direct and indirect costs associated with obtaining a contract. Incremental contract costs that the Company expects to recover are capitalized and amortized over the expected term of the contract. Non-incremental contract costs and costs that the Company does expect to recover are expensed as incurred.

Advertising

The Company engages in very limited distribution and direct-response advertising when promoting RAPIVAB. Advertising and promotional costs are expensed as the costs are incurred.

Research and Development Expenses

The Company's research and development costs are charged to expense when incurred. Research and development expenses include all direct and indirect development costs related to the development of the Company's portfolio of product candidates. Advance payments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized. Such amounts are recognized as expense when the related goods are delivered or the related services are performed. Research and development expenses include, among other items, personnel costs, including salaries and benefits, manufacturing costs, clinical, regulatory, and toxicology services performed by CROs, materials and supplies, and overhead allocations consisting of various administrative and facilities related costs. Most of the Company's manufacturing and clinical and preclinical studies are performed by third-party CROs. Costs for studies performed by CROs are accrued by the Company over the service periods specified in the contracts and estimates are adjusted, if required, based upon the Company's on-going review of the level of services actually performed.

Additionally, the Company has license agreements with third parties, such as Albert Einstein College of Medicine of Yeshiva University ("AECOM"), Industrial Research, Ltd. ("IRL"), and the University of Alabama at Birmingham ("UAB"), which require fees related to sublicense agreements or maintenance fees. The Company expenses sublicense payments as incurred unless they are related to revenues that have been deferred, in which case the expenses are deferred and recognized over the related revenue recognition period. The Company expenses maintenance payments as incurred.

Deferred collaboration expenses represent sub-license payments, paid to the Company's academic partners upon receipt of consideration from various commercial partners, and other consideration paid to the Company's academic partners for modification to existing license agreements. These deferred expenses would not have been incurred without receipt of such payments or modifications from the Company's commercial partners and are being expensed in proportion to the related revenue being recognized. The Company believes that this accounting treatment appropriately matches expenses with the associated revenue.

Stock-Based Compensation

All share-based payments, including grants of stock option awards and restricted stock unit awards, are recognized in the Company's Consolidated Statements of Comprehensive Loss based on their fair values. The fair value of stock option awards is estimated using the Black-Scholes option pricing model. The fair value of restricted stock unit awards is based on the grant date closing price of the common stock. Stock-based compensation cost is recognized as expense on a straight-line basis over the requisite service period of the award. In addition, we have outstanding performance-based stock options for which no compensation expense is recognized until "performance" is deemed to have occurred.

Interest Expense and Deferred Financing Costs

Interest expense for the three months ended March 31, 2020 and 2019 includes $3,047 and $2,726, respectively, related to the issuance of the PhaRMA Notes (defined in Note 4) and the Second Amended and Restated Senior Credit Facility (defined in Note 5). Costs directly associated with the issuance of the PhaRMA Notes and the Senior Credit Facility have been capitalized and are netted against the non-recourse notes payable and senior credit facility on the Consolidated Balance Sheets. These costs are being amortized to interest expense over the terms of the PhaRMA Notes and the Second Amended and Restated Senior Credit Facility using the effective interest rate method. Amortization of deferred financing costs and original issue discount included in interest expense was $341 and $255 for each of the three months ended March 31, 2020 and 2019, respectively.

Currency Hedge Agreement

In connection with the issuance by Royalty Sub of the PhaRMA Notes, the Company entered into a Currency Hedge Agreement to hedge certain risks associated with changes in the value of the Japanese yen relative to the U.S. dollar. The Currency Hedge Agreement does not qualify for hedge accounting treatment; therefore mark to market adjustments are recognized in the Company's Consolidated Statements of Comprehensive Loss. Cumulative mark to market adjustments for the three months ended March 31, 2020 and 2019 resulted in a loss of $20 and a gain of $406, respectively. Mark to market adjustments are determined by a third party pricing model that uses quoted prices in markets that are not actively traded and for which significant inputs are observable directly or indirectly, representing Level 2 in the fair value hierarchy as defined by U.S. GAAP. The Company is also required to post collateral in connection with the mark to market adjustments based on thresholds defined in the Currency Hedge Agreement. As of March 31, 2020 and December 31, 2019, no hedge collateral was posted under the agreement.

Net Loss Per Share

Net loss per share is based upon the weighted average number of common shares outstanding during the period. Diluted loss per share is equivalent to basic net loss per share for all periods presented herein because common equivalent shares from unexercised stock options, warrants and common shares expected to be issued under the Company's employee stock purchase plan were anti-dilutive. The calculation of diluted earnings per share for the three months ended March 31, 2020 and 2019 does not include 12,196 and 3,406, respectively, of such potential common shares, as their impact would be anti-dilutive.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. The most significant estimates in the Company's consolidated financial statements relate to the valuation of stock options, and the valuation allowance for deferred tax assets resulting from net operating losses. These estimates are based on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

Significant Customers and Other Risks

Significant Customers

Other than royalty revenues, the Company's primary sources of revenue that have an underlying cash flow stream are the reimbursement of galidesivir (formerly BCX4430) development expenses earned under cost-plus-fixed-fee contracts with BARDA/HHS and NIAID/HHS and sales of RAPIVAB (peramivir injection) under our procurement contract with the Centers for Disease Control and Prevention. The Company relies on BARDA/HHS and NIAID/HHS to reimburse predominantly all of the development costs for its galidesivir program. Accordingly, reimbursement of these expenses represents a significant portion of the Company's collaborative and other research and development revenues. The completion or termination of the NIAID/HHS and BARDA/HHS galidesivir contracts could negatively impact the Company's future Consolidated Statements of Comprehensive Loss and Cash Flows. The Company recognizes royalty revenue from the net sales of RAPIACTA by Shionogi; however, the underlying cash flow from these royalty payments, except for Japanese government stockpiling sales, goes directly to pay the interest, and then the principal, on the Company's non-recourse notes payable. Payment of the interest and the ultimate repayment of principal of these notes will be entirely funded by future royalty payments derived from net sales of RAPIACTA. Further, the Company's drug development activities are performed by a limited group of third party vendors. If any of these vendors were unable to perform their services, this could significantly impact the Company's ability to complete its drug development activities.

Risks from Third Party Manufacturing and Distribution Concentration

The Company relies on single source manufacturers for active pharmaceutical ingredient and finished drug product manufacturing of product candidates in development. Delays in the manufacture or distribution of any product could adversely impact the commercial revenue and future procurement stockpiling of the Company's product candidates in development.

Credit Risk

Cash equivalents and investments are financial instruments which potentially subject the Company to concentration of risk to the extent recorded on the Consolidated Balance Sheets. The Company deposits excess cash with major financial institutions in the United States. Balances may exceed the amount of insurance provided on such deposits. The Company believes it has established guidelines for investment of its excess cash relative to diversification and maturities that maintain safety and liquidity. To minimize the exposure due to adverse shifts in interest rates, the Company maintains a portfolio of investments with an average maturity of approximately 18 months or less. Other than product sale and collaborative partner receivables discussed above, the majority of the Company's receivables from collaborations are due from the U.S. Government, for which there is no assumed credit risk.

Recent Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* (“ASU 2016-13”).ASU 2016-13 requires a financial asset (or a group of financial assets) measured at amortized cost basis to be presented at the net amount expected to be collected. In addition, ASU 2016-13 requires credit losses relating to available-for-sale debt securities to be recorded through an allowance for credit losses. ASU 2016-13 requires consideration of a broader range of reasonable and supportable information to develop credit loss estimates.

The Company adopted ASU 2016-02 as of January 1, 2020. Given the nature of the Company’s receivables from collaborators, investment portfolio and other financial assets, adoption of this standard did not have a material effect on the Company's financial position, results of operations or cash flows.

In August 2018, the FASB issued Accounting Standards Update No. 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40)* (“ASU 2018-15”). ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The guidance requires entities to capitalize costs for certain implementation activities in the application development stage and expense the capitalized implementation costs over the expected term of the hosting arrangement. ASU 2018-15 is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company elected to adopt this standard early, beginning October 1, 2019 on a prospective basis. Adoption did not have a material effect on the Company's financial position, results of operations or cash flows.

Note 2 - Stock-Based Compensation

As of March 31, 2020, the Company had three stock-based employee compensation plans, the Amended and Restated Stock Incentive Plan (“Incentive Plan”), the Inducement Equity Incentive Plan (“Inducement Plan”) and the Employee Stock Purchase Plan (“ESPP”). The Incentive Plan was amended and restated on April 19, 2019 and approved by the Company’s stockholders on May 29, 2019. The Inducement Plan was adopted by the Board of Directors on April 24, 2019 and amended and restated by the Board of Directors in February 2020. The ESPP was amended and restated in March 2014 and approved by the Company’s stockholders in May 2014. Stock-based compensation expense of $2,754 ($2,437 of expense related to the Incentive Plan, $198 of expense related to the Inducement Plan, and $119 of expense related to the ESPP) was recognized during the first three months of 2020, while $3,317 ($3,166 of expense related to the Incentive Plan and $151 of expense related to the ESPP) was recognized during the first three months of 2019.

There was approximately $22,215 of total unrecognized compensation cost related to non-vested stock option awards and restricted stock unit awards granted by the Company as of March 31, 2020. That cost is expected to be recognized as follows: $6,646 during the remainder of 2020, $7,273 in 2021, $6,091 in 2022, $2,153 in 2023 and $52 in 2024. In addition, the Company has outstanding performance-based stock options for which no compensation expense is recognized until “performance” has occurred and the award vests.

Stock Incentive Plan

The Company grants stock option awards and restricted stock unit awards to its employees, directors, and consultants under the Incentive Plan. Under the Incentive Plan, stock option awards are granted with an exercise price equal to the market price of the Company’s stock at the date of grant. Stock option awards and restricted stock units granted to employees generally vest 25% each year until fully vested after four years. In August 2013, December 2014 and December 2019, the Company issued 1,032, 1,250 and 315 performance-based stock options, respectively. These awards vest upon successful completion of specific development milestones. As of March 31, 2020, 75% of the August 2013 grants have vested. As of March 31, 2020, 85% of the December 2014 grants have vested. As of March 31, 2020, none of the December 2019 grants have vested and no compensation expense has been recognized. During 2019, the Company recognized $4,998 of stock compensation expense related to two milestones within the December 2014 grants for which achievement became probable. Stock option awards granted to non-employee directors of the Company generally vest over one year. All stock option awards have contractual terms of 10 years. The vesting and exercise provisions of all awards granted under the Incentive Plan are subject to acceleration in the event of certain stockholder-approved transactions, or upon the occurrence of a change in control as defined in the Incentive Plan.

Related activity under the Incentive Plan is as follows:

	Awards Available	Options Outstanding	Weighted Average Exercise Price
Balance December 31, 2019	968	21,050	$ 5.96
Restricted stock unit awards granted	(13)	-	-
Restricted stock unit awards cancelled	-	-	-
Stock option awards granted	(15)	15	2.75
Stock option awards exercised	-	-	-
Stock option awards cancelled	1,838	(1,838)	6.90
Balance March 31, 2020	2,778	19,227	$ 5.87

For stock option awards granted under the Incentive Plan during the first three months of 2020 and 2019, the fair value was estimated on the date of grant using a Black-Scholes option pricing model and the assumptions noted in the table below. The weighted average grant date fair value per share of the awards granted during the first three months of 2020 and 2019 was $1.87 and $6.07, respectively. The fair value of the stock option awards is amortized to expense over the vesting periods using a straight-line expense attribution method. The following table summarizes the key assumptions used by the Company to value the stock option awards granted during the first three months of 2020 and 2019. The expected life is based on the average of the assumption that all outstanding stock option awards will be exercised at full vesting and the assumption that all outstanding stock option awards will be exercised at the midpoint of the current date (if already vested) or at full vesting (if not yet vested) and the full contractual term. The expected volatility represents the historical volatility on the Company's publicly traded common stock. The Company has assumed no expected dividend yield, as dividends have never been paid to stock or option holders and will not be paid for the foreseeable future. The weighted average risk-free interest rate is the implied yield currently available on zero-coupon government issues with a remaining term equal to the expected term.

Inducement Equity Incentive Plan

The Company has the ability to grant stock option awards to newly-hired employees as inducements material to each employee entering employment with the Company. Stock option awards granted to newly hired employees are granted with an exercise price equal to the market price of the Company's stock at the date of grant and generally vest 25% each year until fully vested after four years. Each stock option has a term of 10 years and is subject to the terms and conditions of the Inducement Equity Incentive Plan. The vesting and exercise provisions of all awards granted under the Inducement Equity Incentive Plan are subject to acceleration in the event of certain stockholder-approved transactions, or upon the occurrence of a change in control as defined in the Inducement Equity Incentive Plan.

Related activity under the Inducement Plan is as follows:

	Awards Available	Options Outstanding	Weighted Average Exercise Price
Balance December 31, 2019	171	1,329	$ 3.60
Plan amendment	1,700	-	-
Stock option awards granted	(759)	759	2.60
Stock option awards exercised	-	-	-
Stock option awards cancelled	55	(55)	6.53
Balance March 31, 2020	1,167	2,033	$ 3.15

The fair value was estimated on the date of grant using a Black-Scholes option pricing model and the assumptions noted in the table below. The weighted average grant date fair value of these stock option awards was $1.77.

The following table summarizes the key assumptions used by the Company to value the stock option awards granted under the Incentive Plan and the Inducement Plan during first three months of 2020 and 2019, respectively. The expected life is based on the average of the assumption that all outstanding stock option awards will be exercised at full vesting and the assumption that all outstanding stock option awards will be exercised at the midpoint of the current date (if already vested) or at full vesting (if not yet vested) and the full contractual term. The expected volatility represents the historical volatility on the Company's publicly traded common stock. The Company has assumed no expected dividend yield, as dividends have never been paid to stock or option holders and will not be paid for the foreseeable future. The weighted average risk-free interest rate is the implied yield currently available on zero-coupon government issues with a remaining term equal to the expected term.

Weighted Average Assumptions for Stock Option Awards Granted to Employees and Directors under the Plans

	2020	2019
Expected Life in Years	5.5	5.5
Expected Volatility	83.5%	81.0%
Expected Dividend Yield	0.0%	0.0%
Risk-Free Interest Rate	0.8%	2.5%

Employee Stock Purchase Plan ("ESPP")

The Company has reserved a total of 1,475 shares of common stock to be purchased under the ESPP, of which 9 shares remain available for purchase at March 31, 2020. Eligible employees may authorize up to 15% of their salary to purchase common stock at the lower of 85% of the beginning or 85% of the ending price during six-month purchase intervals. No more than 3 shares may be purchased by any one employee at the six-month purchase dates and no employee may purchase stock having a fair market value at the commencement date of $25 or more in any one calendar year. The Company issued 110 shares during the first three months of 2020 under the ESPP. Compensation expense for shares purchased under the ESPP related to the purchase discount and the "look-back" option were determined using a Black-Scholes option pricing model.

Note 3 - Collaborative and Other Research and Development Contracts

National Institute of Allergy and Infectious Diseases ("NIAID/HHS"). In September 2013, NIAID/HHS contracted with the Company for the development of galidesivir as a treatment for Marburg virus disease. NIAID/HHS, part of the National Institutes of Health, made an initial award of $5,000 to the Company. The goals of this contract, including amendments, are to file IND applications for intravenous ("i.v.") and intramuscular ("i.m.") galidesivir for the treatment of Marburg virus disease and other hemorrhagic fever virus diseases, including Yellow Fever and Ebola virus disease, and to conduct an initial Phase 1 human clinical trial. In April 2020, the Company and NIAID agreed to add a group of COVID-19 patients to the ongoing clinical trial in Yellow Fever. On April 9, 2020, the Company announced it had opened enrollment into a randomized, double-blind, placebo-controlled clinical trial to assess the safety, clinical impact and antiviral effects of galidesivir in patients with COVID-19. As of March 31, 2020, the total NIAID/HHS contract amount to advance the program through the completion of the Phase I clinical program is $43,035. As of March 31, 2020, all options have been exercised under this contract.

U.S. Department of Health and Human Services ("BARDA/HHS"). On March 31, 2015, the Company announced that BARDA/HHS had awarded the Company a contract for the continued development of galidesivir as a potential treatment for diseases caused by RNA pathogens, including filoviruses. This BARDA/HHS contract includes a base contract of $16,265 to support galidesivir drug manufacturing, as well as $22,855 in additional development options that can be exercised by the government, bringing the potential value of the contract to $39,120. As of March 31, 2020, a total of $20,574 has been awarded under exercised options within this contract.

The contracts with NIAID/HHS and BARDA/HHS are cost-plus-fixed-fee contracts. That is, the Company is entitled to receive reimbursement for all costs incurred in accordance with the contract provisions that are related to the development of galidesivir plus a fixed fee, or profit. BARDA/HHS and NIAID/HHS will make periodic assessments of progress and the continuation of the contract is based on the Company's performance, the timeliness and quality of deliverables, and other factors. The government has rights under certain contract clauses to terminate these contracts. These contracts are terminable by the government at any time for breach or without cause.

U.S. Department of Health and Human Services ("HHS"). On September 6, 2018, the Company announced that HHS had awarded the Company a $34,660 contract for the procurement of up to 50,000 doses of RAPIVAB (peramivir injection) over a five-year period. HHS's purchase of RAPIVAB will supply the Strategic National Stockpile, the nation's largest supply of potentially life-saving pharmaceuticals and medical supplies for use in a public health emergency. The Company delivered two shipments under this contract in 2019 for a total price of approximately $13,864, and expects to deliver at least one shipment within the award in 2020, totaling approximately $6,932.

Torii Pharmaceutical Co., Ltd. ("Torii"). On November 5, 2019, the Company announced that it had entered into the Torii Agreement, granting Torii the exclusive right to commercialize berotralstat for the prevention of hereditary angioedema ("HAE") attacks in Japan.

Under the Torii Agreement, the Company received an upfront, non-refundable payment of $22,000 and may be eligible to receive an additional milestone payment of either $20,000 if the Japanese Pharmaceuticals and Medical Devices Agency ("PMDA") grants regulatory approval on or before December 31, 2020, or $15,000 if regulatory approval is granted on or before December 31, 2021. In either case, the regulatory milestone payment is contingent upon receipt of a reimbursement price approval from Japan's National Health Insurance system in excess of the threshold specified in the Torii Agreement.

In addition, the Company will be entitled under the Torii Agreement to receive tiered royalty payments based on the amount of annual net sales of berotralstat in Japan during each calendar year. If berotralstat maintains its Sakigake designation during the PMDA review, the tiered royalty rate will range from 20% to 40% of net sales, otherwise, the tiered royalty rate will range from 15% to 35% of net sales. Torii's royalty payment obligations are subject to customary reductions in certain circumstances, but may not be reduced by more than 50% of the amount that otherwise would have been payable to the Company in the applicable calendar quarter. Torii's royalty payment obligations commence upon the first commercial sale of berotralstat in Japan and expire upon the later of (i) the tenth anniversary of the date of first commercial sale of berotralstat in Japan, (ii) the expiration of our patents covering berotralstat, and (iii) the expiration of regulatory exclusivity for berotralstat in Japan. The Company will be responsible for supplying Torii with its required amounts of berotralstat. The activities of the parties pursuant to the Torii Agreement will be overseen by a Joint Steering Committee, to be composed of an equal number of representatives from each party to coordinate the development and commercialization of berotralstat in Japan.

Under the Torii Agreement, the Company has granted Torii a right of first negotiation ("ROFN") to commercialize berotralstat in Japan for the acute treatment of HAE attacks if the Company develops berotralstat for such indication and to commercialize any additional kallikrein inhibitor that the Company may develop in the future for use in HAE in Japan. Under both ROFNs, if the parties do not agree to terms with respect to a definitive amendment to the Torii Agreement or new agreement, as applicable, the terms of the amendment or agreement would be set by a third party arbitrator.

The Company identified performance obligations related to (i) the license to develop and commercialize berotralstat, (ii) regulatory approval support and (iii) reimbursement pricing approval support. These were each determined to be distinct from the other performance obligations. The Company allocated the $22,000 upfront consideration to the identified performance obligations using estimation approaches to determine the standalone selling prices under ASC 606. Specifically, in determining the value related to the license, a valuation approach utilizing risk adjusted discounted cash flow projections was used and an expected cost plus margin approach was utilized for the other performance obligations. The Company recognized $20,101 in revenue in 2019 including $19,344 associated with the license which was transferred to Torii at the execution of the Agreement and $757 related to the year to date services provided in the performance of the two approvals. The remaining $1,899 of the $22,000 upfront payment is expected to be recognized as revenue in 2020 as the services are delivered.

Seqirus UK Limited ("SUL"). On June 16, 2015, the Company and SUL, a limited company organized under the laws of the United Kingdom and a subsidiary of CSL Limited, a company organized under the laws of Australia, entered into a License Agreement (the "SUL Agreement") granting SUL and its affiliates worldwide rights to develop, manufacture and commercialize RAPIVAB (peramivir injection) for the treatment of influenza except for the rights to conduct such activities in Israel, Japan, Korea and Taiwan (the permitted geographies together constituting the "Territory"). The Company retains all rights and associated economics to procure pandemic stockpiling orders for RAPIVAB from the U.S. Government, while SUL has the right to pursue government stockpiling outside the U.S.

Under the terms of the SUL Agreement, the Company is responsible for fulfilling all post-marketing approval commitments in connection with the FDA's approval of the NDA, and upon fulfillment will transfer ownership of and financial responsibility for the NDA to SUL. Pursuant to rights to sell ALPIVAB in the EU, the Company was also responsible for regulatory filings and interactions with the European Medicines Agency ("EMA"). In accordance with the SUL Agreement, the Company and SUL formed a joint steering committee, composed of an equal number of representatives from each party, to oversee, review and coordinate the conduct and progress of the commercialization of RAPIVAB in the Territory and any additional development. In October 2017, SUL transferred Canadian registration rights for RAPIVAB to the Company.

Under the terms of the SUL Agreement, the Company has received an upfront payment of $33,740 and has achieved all development milestones under the contract totaling $12,000. The Company is entitled under the SUL Agreement to receive tiered royalties at a percentage rate beginning in the mid-teens contingent upon meeting minimum thresholds of net sales, as well as a low-thirties percentage of the gross profit from government stockpiling purchases made outside the U.S. Specifically, the Company receives tiered royalties at a percentage rate in the mid-teens to low-forties on net sales in the U.S. during a Contract Year (defined as July 1 - June 30) and tiered royalties at a percentage rate in the mid-teens to mid-twenties on net sales in the Territory, other than in the U.S., during a Calendar Year, each subject to certain downward adjustments for circumstance or events impacting the overall market opportunity. SUL's royalty payment obligations commence on the date of the SUL Agreement and expire, on a country-by-country basis, upon the later of (i) the expiration of legal exclusivity in such country and (ii) ten years from the date of the SUL Agreement (the "Royalty Term"). The Company developed peramivir under a license from UAB and will owe sublicense payments to them on any future milestone payments and/or royalties received by the Company from SUL.

The Company and SUL entered arbitration proceedings that involved many items under the SUL Agreement including, but not limited to, the EMA approval milestone, which BioCryst maintains is due under the contract as well as appropriately commercializing peramivir in the Territory. On March 4, 2020, the International Court of Arbitration of the International Chamber of Commerce ("ICC Tribunal") delivered a Partial Arbitration Award (the "Partial Arbitration Award") in the arbitration matter between the Company and SUL with respect to the SUL Agreement.

In the Partial Arbitration Award, the ICC Tribunal found that, during the term, SUL materially breached and abandoned its core duties to the Company under the Diligent Efforts (as defined in the SUL Agreement) requirements of the SUL Agreement as applicable in the U.S. The ICC Tribunal granted a declaratory judgment in favor of the Company terminating the SUL Agreement and restoring all rights to peramivir to the Company as of March 17, 2020 (or such other date as the parties agree). The ICC Tribunal also awarded the Company its attorneys' fees and expenses incurred in securing the declaratory judgment as well as the costs incurred by the Company in the arbitration. Finally, the ICC Tribunal found that SUL breached the SUL Agreement by failing to pay the milestone payment due to the Company within 30 days of the approval of peramivir for adult use in the European Union and awarded the Company $5,000 (plus interest) for this claim. The ICC Tribunal retained jurisdiction for further proceedings relating to the award of attorneys' fees and for any dispute relating to the return to the Company of all rights to peramivir in the Territory. The Company recorded the settlement gain of $6,138 in other income and legal fees and other expenses of $4,668 in selling, general and administrative expenses for the three months ended March 31, 2020.

Shionogi & Co., Ltd. ("Shionogi"). In February 2007, the Company entered into an exclusive license agreement with Shionogi to develop and commercialize peramivir in Japan for the treatment of seasonal and potentially life-threatening human influenza. Under the terms of the agreement, Shionogi obtained rights to injectable formulations of peramivir in Japan. The Company developed peramivir under a license from UAB and will owe sublicense payments to them on any future milestone payments and/or royalties received by the Company from Shionogi. In October 2008, the Company and Shionogi amended the license agreement to expand the territory covered by the agreement to include Taiwan. Shionogi has commercially launched peramivir under the commercial name RAPIACTA in Japan and Taiwan.

In December 2017, the Company, on behalf of Royalty Sub, instituted arbitration proceedings against Shionogi in order to resolve a dispute with Shionogi under the Shionogi Agreement regarding the achievement of sales milestones and escalating royalties. The arbitration proceedings have concluded, with the decision that no sales milestones have been achieved and that the royalties will remain the same. The costs associated with the arbitration proceedings are recoverable from the assets of Royalty Sub in accordance with the terms of the indenture and servicing agreement relating to the PhaRMA Notes.

Green Cross Corporation ("Green Cross"). In June 2006, the Company entered into an agreement with Green Cross to develop and commercialize peramivir in Korea. Under the terms of the agreement, Green Cross will be responsible for all development, regulatory, and commercialization costs in Korea. The Company received a one-time license fee of $250. The license also provides that the Company will share in profits resulting from the sale of peramivir in Korea, including the sale of peramivir to the Korean government for stockpiling purposes. Furthermore, Green Cross will pay the Company a premium over its cost to supply peramivir for development and any future marketing of peramivir products in Korea.

Mundipharma International Holdings Limited ("Mundipharma"). In February 2006, the Company entered into an exclusive, royalty bearing right and license agreement with Mundipharma for the development and commercialization of Mundesine, a Purine Nucleoside Phosphorylase ("PNP") inhibitor, for use in oncology (the "Original Agreement"). Under the terms of the Original Agreement, Mundipharma obtained rights to Mundesine in markets across Europe, Asia, and Australasia in exchange for a $10,000 up-front payment.

On November 11, 2011, the Company entered into the Amended and Restated License and Development Agreement (the "Amended and Restated Agreement") with Mundipharma, amending and restating the Original Agreement. Under the terms of the Amended and Restated Agreement, Mundipharma obtained worldwide rights to Mundesine. Commencing on November 11, 2011, Mundipharma controls the development and commercialization of Mundesine and assumes all future development and commercialization costs. The Amended and Restated Agreement provides for the possibility of future event payments totaling $15,000 for achieving specified regulatory events for certain indications and tiered royalties ranging from mid to high single-digit percentages of net product sales in each country where Mundesine is sold by Mundipharma. These royalties are subject to downward adjustments based on the then-existing patent coverage and/or the availability of generic compounds in each country.

Albert Einstein College of Medicine of Yeshiva University and Industrial Research, Ltd. ("AECOM" and "IRL" respectively). In June 2000, the Company licensed a series of potent inhibitors of PNP from AECOM and IRL, (collectively, the "Licensors"). The lead product candidates from this collaboration are forodesine and ulodesine. The Company has obtained worldwide exclusive rights to develop and ultimately distribute these, or any other, product candidates that might arise from research on these inhibitors. The Company has the option to expand the agreement to include other inventions in the field made by the investigators or employees of the Licensors. The Company agreed to use commercially reasonable efforts to develop these drugs. In addition, the Company has agreed to pay certain milestone payments for each licensed product (which range in the aggregate from $1,400 to almost $4,000 per indication) for future development of these inhibitors, single digit royalties on net sales of any resulting product made by the Company, and to share approximately one quarter of future payments received from other third-party partners, if any. In addition, the Company has agreed to pay annual license fees, which can range from $150 to $500, that are creditable against actual royalties and other payments due to the Licensors. This agreement may be terminated by the Company at any time by giving 60 days advance notice or in the event of material uncured breach by the Licensors.

In May 2010, the Company amended the licensee agreement through which the Company obtained worldwide exclusive rights to develop and ultimately distribute any product candidates that might arise from research on a series of PNP inhibitors, including forodesine and ulodesine. Under the terms of the amendment, the Licensors agreed to accept a reduction of one-half in the percentage of future payments received from third-party sub licensees of the licensed PNP inhibitors that must be paid to the Licensors. This reduction does not apply to (i) any milestone payments the Company may receive in the future under its license agreement dated February 1, 2006 with Mundipharma and (ii) royalties received from its sub licensees in connection with the sale of licensed products, for which the original payment rate will remain in effect. The rate of royalty payments to the Licensors based on net sales of any resulting product made by the Company remains unchanged.

On November 17, 2011, the Company further amended its agreements with the Licensors whereby the Licensors agreed to accept a reduction of one-half in the percentage of Net Proceeds (as defined) received by the Company under its Amended and Restated Agreement with Mundipharma that will be paid to AECOM/IRL.

On June 19, 2012, the Company further amended its agreements with AECOM/IRL whereby the parties clarified the definition of the field with respect to PNP inhibition and AECOM/IRL agreed to exclusive worldwide license of galidesivir to BioCryst for any antiviral use.

At its sole option and subject to certain agreed upon conditions, any future non-royalty payments due to be paid by the Company to AECOM/IRL under the license agreement may be made either in cash, in shares of the Company's common stock, or in a combination of cash and shares.

On January 6, 2014, the Carbohydrate Chemistry Research Team from Callaghan Innovation Research Limited, formerly Industrial Research Limited, transferred to Victoria University of Wellington ("VUW") to establish the Ferrier Research Institute. The intellectual property rights relating to this research team, and the contracts relating to that intellectual property were transferred to a wholly owned subsidiary of VUW, including the contracts to which BioCryst is a party. The parties executed novation agreements in order to effectuate the transfer. Except for a substitution of parties, the terms and conditions of the contracts are substantially the same

The University of Alabama at Birmingham ("UAB"). The Company currently has agreements with UAB for influenza neuraminidase and complement inhibitors. Under the terms of these agreements, UAB performed specific research for the Company in return for research payments and license fees. UAB has granted the Company certain rights to any discoveries in these areas resulting from research developed by UAB or jointly developed with the Company. The Company has agreed to pay single digit royalties on sales of any resulting product and to share in future payments received from other third-party partners. The Company has completed the research under the UAB agreements. These two agreements have initial 25-year terms, are automatically renewable for five-year terms throughout the life of the last patent and are terminable by the Company upon three months' notice and by UAB under certain circumstances. Upon termination both parties shall cease using the other parties' proprietary and confidential information and materials, the parties shall jointly own joint inventions and UAB shall resume full ownership of all UAB licensed products. There is currently no activity between the Company and UAB on these agreements, but when the Company licenses this technology, such as in the case of the Shionogi, Green Cross and SUL agreements, or commercializes products related to these programs, the Company will owe sublicense fees or royalties on amounts it receives.

Note 4 - Royalty Monetization

Overview

On March 9, 2011, the Company completed a $30,000 financing transaction to monetize certain future royalty and milestone payments under the Shionogi Agreement, pursuant to which Shionogi licensed from the Company the rights to market RAPIACTA in Japan and Taiwan. The Company received net proceeds of $22,691 from the transaction after transaction costs of $4,309 and the establishment of a $3,000 interest reserve account by Royalty Sub, available to help cover interest shortfalls in the future. All of the interest reserve account has been fully utilized with the September 2012 interest payment.

As part of the transaction, the Company entered into a purchase and sale agreement dated as of March 9, 2011 with Royalty Sub, whereby the Company transferred to Royalty Sub, among other things, (i) its rights to receive certain royalty and milestone payments from Shionogi arising under the Shionogi Agreement, and (ii) the right to receive payments under a Japanese yen/US dollar foreign currency hedge arrangement (as further described below, the "Currency Hedge Agreement") put into place by the Company in connection with the transaction. Royalty payments will be paid by Shionogi in Japanese yen and milestone payments will paid in U.S. dollars. The Company's collaboration with Shionogi was not impacted as a result of this transaction.

Non-Recourse Notes Payable

On March 9, 2011, Royalty Sub completed a private placement to institutional investors of $30,000 in aggregate principal amount of its PhaRMA Senior Secured 14.0% Notes due 2020 (the "PhaRMA Notes"). The PhaRMA Notes were issued by Royalty Sub under an Indenture, dated as of March 9, 2011 (the "Indenture"), by and between Royalty Sub and U.S. Bank National Association, as Trustee. Principal and interest on the PhaRMA Notes issued are payable from, and are secured by, the rights to royalty and milestone payments under the Shionogi Agreement transferred by the Company to Royalty Sub and payments, if any, made to Royalty Sub under the Currency Hedge Agreement. The PhaRMA Notes bear interest at 14% per annum, payable annually in arrears on September 1st of each year. The Company remains entitled to receive any royalties and milestone payments related to sales of peramivir by Shionogi following repayment of the PhaRMA Notes.

Royalty Sub's obligations to pay principal and interest on the PhaRMA Notes are obligations solely of Royalty Sub and are without recourse to any other person, including the Company, except to the extent of the Company's pledge of its equity interests in Royalty Sub in support of the PhaRMA Notes. The Company may, but is not obligated to, make capital contributions to a capital account that may be used to redeem, or on up to one occasion pay any interest shortfall on, the PhaRMA Notes.

In September 2014, Royalty Sub was unable to pay the accrued interest obligation due September 3, 2013. Under the terms of the Indenture, Royalty Sub's inability to pay the full amount of interest payable in September 2013 by the next succeeding Payment Date for the PhaRMA Notes, which was September 1, 2014, constituted an event of default. Accordingly, the PhaRMA Notes and related accrued interest have been classified as current liabilities on the December 31, 2014 balance sheet and thereafter. As a result of the event of default under the PhaRMA Notes, the holders of the PhaRMA Notes may pursue acceleration of the PhaRMA Notes, may foreclose on the collateral securing the PhaRMA Notes and the equity interest in Royalty Sub and exercise other remedies available to them under the Indenture in respect of the PhaRMA Notes. In such event, the Company may not realize the benefit of future royalty payments that might otherwise accrue to it following repayment of the PhaRMA Notes and it might otherwise be adversely affected. Due to the non-recourse nature of the PhaRMA Notes, in the event of any potential acceleration or foreclosure, the primary impact to the Company would be the loss of future royalty payments from Shionogi and legal costs associated with retiring the PhaRMA Notes. In addition, the Company may incur costs associated with liquidating the related Currency Hedge Agreement, which would no longer be required in the event of foreclosure, or if the PhaRMA Notes cease to be outstanding. As the PhaRMA Notes are the obligation of Royalty Sub and non-recourse to the Company, the event of default of the PhaRMA Notes is not expected to have a significant impact on the Company's future results of operations or cash flows. As of March 31, 2020, the PhaRMA Notes remain in default.

The Indenture does not contain any financial covenants. The Indenture includes customary representations and warranties of Royalty Sub, affirmative and negative covenants of Royalty Sub, Events of Default and related remedies, and provisions regarding the duties of the Trustee, indemnification of the Trustee, and other matters typical for indentures used in structured financings of this type.

As of March 31, 2020, the aggregate fair value of the PhaRMA Notes was estimated to be approximately 3% of the PhaRMA Notes carrying value of $30,000. The estimated fair value of the PhaRMA Notes is classified as Level 3 in the fair value hierarchy as defined in U.S. GAAP.

The PhaRMA Notes are redeemable at the option of Royalty Sub at any time at a redemption price equal to the outstanding principal balance of the PhaRMA Notes being redeemed plus accrued and unpaid interest through the redemption date on the PhaRMA Notes being redeemed.

Currency Hedge Agreement

In connection with the issuance by Royalty Sub of the PhaRMA Notes, the Company entered into a Currency Hedge Agreement to hedge certain risks associated with changes in the value of the Japanese yen relative to the U.S. dollar. Under the Currency Hedge Agreement, the Company has the right to purchase dollars and sell yen at a rate of 100 yen per dollar for which the Company may be required to pay a premium in 2020, provided the Currency Hedge Agreement remains in effect. A payment of $1,950 will be required if, on May 18, the U.S. dollar is worth 100 yen or less as determined in accordance with the Currency Hedge Agreement.

The Currency Hedge Agreement does not qualify for hedge accounting treatment; therefore, mark to market adjustments are recognized in the Company's Consolidated Statement of Comprehensive Loss. Cumulative mark to market adjustments for the three months ended March 31, 2020 and 2019 resulted in a loss $20 and a gain of $406 respectively. The Company is also required to post collateral in connection with the mark to market adjustments based on defined thresholds. As of March 31, 2020 and December 31, 2019, no collateral was posted under the Currency Hedge Agreement. The Company will not be required to post collateral exceeding the maximum premium payments remaining payable under the Currency Hedge Agreement. As of March 31, 2020, the maximum amount of hedge collateral the Company may be required to post is $1,950.

Note 5 - Senior Credit Facility

On February 5, 2019, the Company entered into a $100,000 Senior Credit Facility with an affiliate of MidCap Financial Services, LLC, as administrative agent (the "Second Amended and Restated Senior Credit Facility"). Borrowings under the Second Amended and Restated Senior Credit Facility will be available in three tranches, with (i) the first tranche comprised of $50,000 funded at closing, which includes $30,000 of proceeds that were deemed rolled over from the outstanding principal amount under the Company's prior credit agreement, (ii) the second tranche to be comprised of $30,000, and (iii) the third tranche to be comprised of $20,000, with the second and third tranches to be funded upon the completion of certain contingencies related to the Company's development activities of its product candidates and the establishment of certain financial covenants. On September 10, 2019 the Company executed the first amendment to the Second Amended and Restated Credit Facility which extended the commitment termination date for the second tranche to November 30, 2019. On November 30, 2019, the Company's access to the second tranche expired.

The Second Amended and Restated Senior Credit Facility refinanced and replaced the Amended and Restated Senior Credit Facility dated as of July 20, 2018 (the "Amended and Restated Senior Credit Facility"). The Second Amended and Restated Senior Credit Facility bears a variable interest rate of LIBOR (which shall not be less than 0.5%) plus 8%. The Second Amended and Restated Senior Credit Facility includes an interest-only payment period through June 2020 and scheduled monthly principal and interest payments for the subsequent 30 months. The Company used a portion of the proceeds of the Second Amended and Restated Senior Credit Facility to pay off outstanding amounts under the Amended and Restated Senior Credit Facility and the remainder will be used for general corporate purposes. Under the Second Amended and Restated Senior Credit Facility, the Company must maintain a minimum cash balance of $25,000 of unrestricted cash at all times.

As of March 31, 2020, the Company had borrowings of $50,000 under the Second Amended and Restated Senior Credit Facility bearing an interest rate of 9.6%. The carrying amount of the debt approximates its fair value based on prevailing interest rates as of the balance sheet date. The remaining scheduled principal repayments of the Second Amended and Restated Senior Credit Facility are as follows:

Principal Payments		
2020	$	10,000
2021		20,000
2022		20,000
Total	$	50,000

The debt agreement contains two provisions that if deemed probable would create the recognition of an embedded feature; however, we do not believe either provision is probable.

Note 6 - Stockholders' Equity

On April 24, 2020, the Company filed a $500,000 shelf registration statement on Form S-3 with the SEC. Once it becomes effective, this shelf registration statement will allow the Company to sell securities, including common stock, preferred stock, depository shares, stock purchase contracts, warrants, debt securities and units, from time to time at prices and on terms to be determined at the time of sale.

On November 8, 2017, the Company filed a $200,000 shelf registration statement on Form S-3 with the SEC. This shelf registration statement became effective on December 12, 2017 and allows the Company to sell securities, including common stock, preferred stock, depository shares, stock purchase contracts, warrants and units, from time to time at prices and on terms to be determined at the time of sale.

Note 7 – Lease Obligations and Other Contingencies

The Company leases certain assets under operating leases, which primarily consisted of real estate leases, laboratory equipment leases and office equipment leases at March 31, 2020. Certain operating leases provide for renewal options, which can vary by lease. The right-of-use asset and lease liabilities on the Company's Consolidated Balance Sheet represent payments over the lease term, which includes renewal options for certain real estate leases that we are likely to exercise. As part of the Company's assessment of the lease term, the Company elected the hindsight practical expedient, which allows companies to use current knowledge and expectations when determining the likelihood to extend lease options. Renewal options for our leases range from 1 to 5 years in length and begin from 2023 through 2026. The weighted average lease term for the Company's operating leases was 13.5 years. The discount rate used in the calculation of the Company's right-of-use asset and lease liability was determined based on the stated rate within each contract when available, or the Company's collateralized borrowing rate from lending institutions. The weighted average discount rate for the Company's operating leases was 12.7%.

The Company has not made any residual value guarantees related to its operating leases; therefore, the Company has no corresponding liability recorded on its Consolidated Balance Sheets.

Aggregate lease expense under operating leases was $448 and $309 for the three-month periods ended March 31, 2020 and March 31, 2019, respectively. Certain operating leases include rent escalation provisions, which the Company recognizes as expense on a straight-line basis. Lease expense for leases with an initial term of twelve months or less was not material.

Future lease payments for assets under operating leases as of March 31, 2020, are as follows:

Remaining Maturities of Lease Liabilities **Year Ending December 31,**	**Operating Leases**
2020	$ 1,257
2021	645
2022	582
2023	563
2024	568
Thereafter	7,903
Total lease payments	11,518
Less imputed interest	6,488
Total	$ 5,030

Of the Company's total lease liability, $1,301 is a current liability and $3,729 is a long-term liability at March 31, 2020. The current and long-term portions of the Company's lease liability are presented within "Accrued expenses" and "Other non-current liabilities" on the Consolidated Balance Sheets. The Company's right-of use asset balance associated with operating leases totaled $3,811 at March 31, 2020. This amount is presented within "Other long-term assets" on the Consolidated Balance Sheets.

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

This Quarterly Report on Form 10-Q contains statements of a forward-looking nature relating to future events or the future financial performance of BioCryst. Such statements are only predictions and the actual events or results may differ materially from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences include those discussed below and elsewhere in this report, as well as those discussed in other filings made by the Company with the Securities and Exchange Commission, including the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. See "Information Regarding Forward-Looking Statements."

Cautionary Statement

The discussion herein contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which are subject to the "safe harbor" created in Section 21E. Forward looking statements regarding our financial condition and our results of operations that are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted within the United States ("U.S. GAAP"), as well as projections for the future. The preparation of these financial statements requires our management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We evaluate our estimates on an ongoing basis. Our estimates are based on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. The results of our estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources.

We operate in a highly competitive environment that involves a number of risks, some of which are beyond our control. We are subject to risks common to biotechnology and biopharmaceutical companies, including risks inherent in our drug discovery, drug development and commercialization efforts, clinical trials, uncertainty of regulatory actions and marketing approvals, reliance on collaborative partners, enforcement of patent and proprietary rights, the need for future capital, competition associated with products, potential competition associated with our product candidates and retention of key employees. In order for any of our product candidates to be commercialized, it will be necessary for us, or our collaborative partners, to conduct clinical trials, demonstrate efficacy and safety of the product candidate to the satisfaction of regulatory authorities, obtain marketing approval, enter into manufacturing, distribution and marketing arrangements, and obtain market acceptance and adequate reimbursement from government and private insurers. We cannot provide assurance that we will generate significant revenues or achieve and sustain profitability in the future. In addition, we can provide no assurance that we will have sufficient funding to meet our future capital requirements. Furthermore, the ongoing COVID-19 pandemic could create challenges in all aspects of our business, including without limitation delays, stoppages, difficulties and increased expenses with respect to our and our partners' development, regulatory processes and supply chains, could negatively impact our ability to access the capital or credit markets to finance our operations, or could have the effect of heightening many of the risks described in Item 1A. "Risk Factors" in this Quarterly Report on Form 10-Q.

Statements contained in Management's Discussion and Analysis of Financial Condition and Results of Operations and elsewhere in this report which are not historical facts are, or may constitute, forward-looking statements. Forward-looking statements involve known and unknown risks that could cause our actual results to differ materially from expected results. The most significant known risks are discussed in the section entitled "Risk Factors." Although we believe the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. We caution you not to place undue reliance on any forward-looking statements.

Our revenues are difficult to predict and depend on numerous factors, including the prevalence and severity of influenza in regions for which peramivir has received regulatory approval, seasonality of influenza, commercialization efforts and resources dedicated to our products by our collaborative partners, ongoing discussions with government agencies regarding future peramivir and/or galidesivir development and stockpiling procurement, as well as entering into, or modifying, licensing agreements for our product candidates. Furthermore, revenues related to our collaborative development activities are dependent upon the progress toward and the achievement of developmental milestones by us or our collaborative partners.

Our operating expenses are also difficult to predict and depend on several factors, including research and development expenses (and whether these expenses are reimbursable under government contracts), drug manufacturing, and clinical research activities, the ongoing requirements of our development programs, and the availability of capital and direction from regulatory agencies, which are difficult to predict. Management may be able to control the timing and level of research and development and general and administrative expenses, but many of these expenditures will occur irrespective of our actions due to contractually committed activities and/or payments.

As a result of these factors, we believe that period to period comparisons are not necessarily meaningful and you should not rely on them as an indication of future performance. Due to all of the foregoing factors, it is possible that our operating results will be below the expectations of market analysts and investors. In such event, the prevailing market price of our common stock could be materially adversely affected.

Overview

We are a biotechnology company that discovers novel, oral, small-molecule medicines. We focus on oral treatments for rare diseases in which significant unmet medical needs exist and an enzyme plays the key role in the biological pathway of the disease. We integrate the disciplines of biology, crystallography, medicinal chemistry and computer modeling to discover and develop small molecule pharmaceuticals through the process known as structure-guided drug design.

Critical Accounting Policies and Estimates

The accompanying discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements and the related disclosures, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosure of contingent assets and liabilities. We evaluate our estimates, judgments and the policies underlying these estimates on a periodic basis, as situations change, and regularly discuss financial events, policies, and issues with members of our audit committee and our independent registered public accounting firm. We routinely evaluate our estimates and policies regarding revenue recognition, administration, inventory and manufacturing, taxes, stock-based compensation, research and development, consulting and other expenses and any associated liabilities.

Recent Corporate Highlights

The outbreak of novel coronavirus ("COVID-19") has severely impacted global economic activity and caused significant volatility and negative pressure in financial markets. To date, our financial condition, results of operations, and liquidity have not been materially impacted by the direct effects of the COVID-19 pandemic. However, the COVID-19 pandemic is constantly evolving and its full impact to our business is uncertain. We are monitoring the COVID-19 pandemic and are making adjustments intended to assist in protecting the safety of our employees and communities while continuing our business activities. We have implemented remote working arrangements where possible and restricted business-related travel. To date, implementation of these measures has not required material expenditures or significantly impacted our ability to operate our business or our internal controls over financial reporting and disclosure controls and procedures. We are continuing to monitor developments with respect to the outbreak and its potential impacts on our operations and those of our partners, suppliers, and regulators.

Berotralstat (BCX7353)

Berotralstat is our lead molecule that is being developed as an oral, once-daily therapy for the prevention of hereditary angioedema ("HAE") attacks. We successfully completed our pivotal Phase 3 clinical trial, APeX-2, and reported 48-week data from our ongoing long-term safety clinical trial, APeX-S, in 2019. Based on the data from our clinical program, including APeX-2 and APeX-S, we submitted a new drug application to the U.S. Food and Drug Administration (the "FDA") in December 2019 for approval of oral, once daily berotralstat for the prevention of HAE attacks. In February 2020, the FDA notified us that they had accepted and filed our New Drug Application ("NDA") for review and that our Prescription Drug User Fee Act date for the NDA is December 3, 2020. In the NDA filing acceptance letter, the FDA stated that they are not currently planning to hold an advisory committee meeting to discuss the NDA.

On March 30, 2020, we announced that the European Medicines Agency ("EMA") had validated its marketing authorization application ("MAA") submission for approval of berotralstat for the prevention of HAE attacks. With this validation, the EMA has begun their formal review of the MAA under the centralized procedure for all member states of the European Union, and Norway, Iceland and Liechtenstein. An opinion from the Committee for Medicinal Products for Human Use is expected within approximately 12 months from MAA validation.

In addition, we have completed APeX-J, a clinical trial of berotralstat for the prevention of HAE attacks designed to support Japanese marketing authorization in conjunction with our other berotralstat clinical trials. On February 3, 2020, we announced we had submitted a new drug application to the Japanese Pharmaceuticals and Medical Devices Agency ("PMDA") for approval of oral, once daily berotralstat for the prevention of HAE attacks. We expect approval of berotralstat in Japan in the second half of 2020.

In anticipation of a commercial launch of berotralstat, we are in the process of developing our business infrastructure, personnel, partnerships, and marketing strategies to position berotralstat for success in the commercial market, which we anticipate—based on proprietary market research, including analyses of HAE prevalence in the U.S. and market research studies with HAE patients, physicians, and payors in the U.S.—has the potential to reach a global peak of over $500 million in annual sales. These expectations are subject to numerous risks and uncertainties that may cause our actual results, performance or achievements to be materially different. There can be no assurance that regulatory approval of berotralstat will be granted in a timely fashion or at all, that our commercialization methods and strategies will succeed, or that the market for berotralstat will develop in line with our current expectations. See the "Risk Factors" section of this Quarterly Report on Form 10-Q, including the information under "Risk Factors—We do not have a great deal of experience in commercializing our products or technologies, and our future revenue generation is uncertain" for further discussion of these risks.

On May 5, 2020, we announced that the United States Patent and Trademark Office issued a notice of allowance for a new composition of matter patent which extends patent protection for berotralstat in the U.S. market by four years through October 2039.

APeX-2 Phase 3 Trial: APeX-2 is a Phase 3 double-blinded, placebo-controlled, three-arm clinical trial evaluating two dose levels of berotralstat administered orally once-daily as a preventive treatment to reduce the frequency of attacks in patients with HAE. APeX-2 tested once-daily berotralstat at 110 mg and 150 mg for prevention of angioedema attacks. The trial enrolled patients with Type I and II HAE in the United States, Canada and Europe. The primary efficacy endpoint of APeX-2 is the rate of angioedema attacks over 24 weeks of study drug administration. The trial enrolled and randomized 121 patients. The APeX-2 trial has been amended to extend the duration of dosing to monitor the long-term safety of the trial. Patients may continue in the trial on open-label berotralstat (150 mg).

On March 16, 2020, we announced new data from the APeX-2 trial showing 150 mg of oral, once-daily berotralstat for prophylaxis of HAE attacks reduced patients' monthly use of standard of care ("SOC") on-demand medicine by 53.6 percent ($p<0.001$) compared to placebo, and reduced the number of HAE attacks requiring acute SOC treatment by 49.2 percent ($p<0.001$) compared to placebo. Additional new data showed that the percentage of HAE attacks requiring re-treatment with multiple doses of on-demand therapy was lower for patients receiving berotralstat (150 mg) than placebo.

APeX-J Trial: On January 12, 2020, we reported data from our APeX-J trial in Japan, designed to support potential Japanese approval of berotralstat for the prevention of HAE attacks. APeX-J met its primary endpoint ($p=0.003$) for prevention of HAE attacks, and berotralstat was safe and generally well-tolerated.

We are continuing additional formulation work and discussing trial protocol with regulatory agencies for ZENITH-2, a Phase 3 clinical trial of oral berotralstat (750 mg) for the acute treatment of HAE. We have deprioritized this program in light of the market trend toward oral prophylaxis.

Complement-Mediated Diseases

On June 27, 2019, we announced that we began enrollment of a Phase 1 trial of BCX9930, an oral Factor D inhibitor discovered and developed by us, for the treatment of complement-mediated diseases. The objectives of the trial are to evaluate the safety and tolerability of single and multiple ascending doses of BCX9930 in healthy subjects and to characterize the pharmacokinetic ("PK") and pharmacodynamic ("PD") profiles of BCX9930 in single and multiple ascending doses of BCX9930 in healthy subjects (parts 1 & 2). In part three of the trial, there is an additional objective to demonstrate proof of concept in paroxysmal nocturnal hemoglobinuria ("PNH") patients by evaluating key biomarkers of effectiveness in PNH patients taking BCX9930.

On January 12, 2020, we announced that we had completed an additional MAD cohort with 50 mg of oral BCX9930 or placebo administered every 12 hours for 14 days, with vaccination instead of an antibiotic. In the additional MAD cohort, a benign rash (similar to prior MAD cohorts) that was self-limited and resolved in 4 to 8 days post-onset was seen in seven healthy volunteers; the protocol allowed two of these healthy volunteers with more limited surface area affected by the rash to continue receiving BCX9930. Both of these healthy volunteers successfully dosed-through benign rash, with rash resolving on-drug, in both patients; biopsies of rashes from multiple subjects confirm the benign nature of the rash. The protocol for part three of the trial in PNH patients allows any patient who develops a clinically benign rash to continue dosing with BCX9930.

Based on the safety, tolerability, PK and PD dose-response results from parts 1 and 2 of the Phase 1 trial, we completed additional MAD dosing cohorts and advanced to part 3 of the trial, a proof of concept ("PoC") study of BCX9930 in PNH patients who are poor responders to eculizumab or ravulizumab, and treatment-naïve patients. We have also successfully dosed MAD cohorts of 200 milligrams twice a day and 400 milligrams twice a day. On March 5, 2020 we announced that we had dosed the first PNH patients in part three of the trial. These patients were naïve to eculizumab and ravulizumab.

On May 6, 2020, we announced that low dose cohort (50 mg and 100 mg twice-daily) data in three treatment-naïve PNH patients who completed 28 days of therapy showed that BCX9930 inhibited complement and was safe and generally well tolerated. These patients were severely ill, with pre-treatment LDH levels from 3.7 to 11 times the upper limit of normal (ULN) and low hemoglobin of 6.0 to 8.2 g/dL. All patients had dose-dependent reductions in LDH and increases in hemoglobin. No drug-related serious adverse events were observed, and no PNH patients experienced rash. Based on the investigators' assessment of clinical benefit, all three patients continued on therapy with BCX9930 (100 mg twice-daily) following the 28-day study window.

With the recent enrollment of a fourth patient with PNH, enrollment is now complete in treatment-naïve cohort 1 (50 mg and 100 mg twice-daily). Treatment-naïve cohort 2 (200 mg and 400 mg twice-daily) is expected to begin enrollment upon completion of cohort 1, with data expected in the third quarter of 2020. Data from the 200 mg and 400 mg twice-daily multiple ascending dose (MAD) cohorts in healthy volunteers shows >98 percent suppression of the alternative pathway beyond 12 hours and no dose-limiting adverse events. Given these data, we expect to achieve our goal of monotherapy for PNH patients in cohort 2 (200 mg and 400 mg twice-daily).

We plan to begin enrolling PNH patients resistant to C5 inhibitors in the third quarter of 2020 and expect to report data from these treatment-resistant patients by the end of 2020.

Fibrodysplasia Ossificans Progressiva ("FOP")

The goal of the ALK2 inhibitor project program at BioCryst is to discover and develop orally administered kinase inhibitor drug candidates that are able to slow or prevent the progressive formation of bone in soft tissues, also known as heterotopic ossification ("HO"). Our lead compound, BCX9250, reduced HO in an experimental model of ALK2-driven HO in laboratory rats, with up to 89 percent reduction in volume of HO compared to controls. On November 1, 2019, we announced that we had begun a Phase 1 clinical trial with oral BCX9250 for the treatment of FOP. The Phase 1 trial will evaluate single and multiple ascending doses of oral BCX9250 in healthy volunteers. We expect to report the results from the trial in the second half of 2020.

RAPIVAB/ALPIVAB/RAPIACTA/PERAMIFLU (peramivir injection)

On March 4, 2020, the International Court of Arbitration of the International Chamber of Commerce ("ICC Tribunal") delivered a Partial Arbitration Award (the "Partial Arbitration Award") in the arbitration matter between us and SUL with respect to the SUL Agreement for the commercialization of peramivir by SUL. In the Partial Arbitration Award, the ICC Tribunal found that, during the term, SUL materially breached and abandoned its core duties to us under the Diligent Efforts (as defined in the SUL Agreement) requirements of the SUL Agreement as applicable in the U.S. The ICC Tribunal granted a declaratory judgment in favor of us terminating the SUL Agreement and restoring all rights to peramivir to us as of March 17, 2020 (or such other date as the parties agree). The ICC Tribunal also awarded us our attorneys' fees and expenses incurred in securing the declaratory judgment as well as the costs incurred by us in the arbitration. Finally, the ICC Tribunal found that SUL breached the SUL Agreement by failing to pay the milestone payment due to us within 30 days of the approval of peramivir for adult use in the European Union and awarded us $5.0 million (plus interest) for this claim. The ICC Tribunal retained jurisdiction for further proceedings relating to the award of attorneys' fees and for any dispute relating to the return to us of all rights to peramivir in the Territory.

Galidesivir (formerly BCX4430)

On May 9, 2019, we announced the completion of a randomized, placebo-controlled Phase 1 clinical trial to evaluate intravenous (“i.v.”) galidesivir in healthy volunteers. In the trial, galidesivir was generally safe and well tolerated. This placebo-controlled trial evaluated the safety, tolerability and pharmacokinetics of escalating doses of galidesivir in four single-dose cohorts of 5mg/kg, 10 mg/kg, 15 mg/kg and 20 mg/kg, with a total of 24 volunteers receiving galidesivir by i.v. infusion. Drug exposures (Cmax and AUC) at the highest dose were 20,500 ng/mL and 44,600 hr.ng/mL, similar to or greater than drug exposures needed in nonclinical galidesivir treatment experiments in Marburg virus disease and Yellow Fever.

In April 2020, we agreed with the National Institute of Allergy and Infectious Diseases (“NIAID/HHS”) to add a group of COVID-19 patients to the ongoing clinical trial in Yellow Fever. On April 9, 2020, we announced that we had opened a randomized, double-blind, placebo-controlled clinical trial to assess the safety, clinical impact and antiviral effects of galidesivir in patients with COVID-19. The trial (NCT03891420) is being funded by NIAID/HHS, part of the National Institutes of Health.

Galidesivir has demonstrated broad-spectrum activity in vitro against more than 20 RNA viruses in nine different families, including the coronaviruses that cause MERS and SARS.

In the COVID-19 patients, efficacy measures include qualitative and quantitative changes from baseline, time to clinical improvement, time to hospital discharge, time to undetectable levels (as measured by polymerase chain reaction (“PCR”) in respiratory specimens) of SARS-CoV-2, the virus that causes COVID-19, and all-cause mortality.

The trial is being conducted in Brazil under a U.S. investigational new drug application, and the protocol also has been approved by the Agência Nacional de Vigilância Sanitária and the Brazilian National Ethics Committee.

Part 1 of the trial will enroll 24 hospitalized adults diagnosed with moderate to severe COVID-19 confirmed by PCR. Three cohorts of eight patients will be randomized to receive i.v. galidesivir (n=6) or placebo (n=2) every 12 hours for 7 days. Upon completion of part 1 of the trial, an optimized dosing regimen of galidesivir will be selected for part 2 of the trial, based on part 1 results including safety, viral load reduction in respiratory tract secretions, improvement in COVID-19 signs and symptoms and clinical manifestations, and mortality. Currently, in part 2 of the trial, up to 42 hospitalized patients with COVID-19 will be randomized 2:1 to receive i.v. galidesivir or placebo. After treatment, the patients will remain hospitalized until resolution of COVID-19 symptoms allows release. All patients will be followed for mortality through Day 56.

The galidesivir development program is substantially funded with federal funds from NIAID/HHS and by the Biomedical Advanced Research and Development Authority (“BARDA/HHS”). Since September 2013, NIAID/HHS has supported us in developing galidesivir as a therapeutic for Ebola and Marburg viruses. Since March 2015, BARDA/HHS has supported the galidesivir development program for the continued development of galidesivir as a potential treatment for filoviruses.

We are in active dialogue with NIAID/HHS, relevant U.S. public health authorities, and clinical investigators as they assess potential approaches to evaluate investigational antiviral drugs for treatment of COVID-19, with the goal of determining if galidesivir is effective against SARS-CoV-2, the virus that causes COVID-19, and expanding the current supply of the drug.

Results of Operations (three months ended March 31, 2020 compared to the three months ended March 31, 2019)

For the three months ended March 31, 2020, total revenues were $4.8 million as compared to $5.9 million for the three months ended March 31, 2019. The decrease was primarily due to reduced peramivir product sales and lower royalty revenues, partially offset by amortization of deferred revenue from the Torii agreement. Revenues in the first quarter of 2020 included $0.2 million of peramivir product revenue from inventory sales to our commercial partners, $1.9 million of royalty revenue from Shionogi, Green Cross and SUL associated with sales of peramivir in Japan, Taiwan, Korea and the United States, $1.1 million of deferred revenue amortization related to the Torii Agreement and $1.6 million of reimbursement of collaborative expenses from NIAID/HHS and BARDA/HHS related to the development of galidesivir. Revenues in the first quarter of 2019 included $1.7 million of peramivir product revenue from inventory sales to our commercial partners, $2.3 million of royalty revenue from Shionogi, Green Cross and SUL associated with sales of peramivir in Japan, Taiwan, Korea and the United States, and $1.9 million of reimbursement of collaborative expenses from NIAID/HHS and BARDA/HHS related to the development of galidesivir.

Research and development (“R&D”) expenses increased to $29.9 million for the first quarter of 2020 from $27.5 million in 2019. The increase in 2020 R&D expenses, as compared to 2019, was primarily due to increased spending on our complement-mediated diseases program and other preclinical development initiatives.

The following table summarizes our R&D expenses for the periods indicated (amounts are in thousands).

	Three Months Ended March 31,	
	2020	2019
R&D expenses by program:		
BCX7353	$ 15,545	$ 16,255
BCX9930	7,649	5,228
Galidesivir	1,458	1,654
BCX9250	1,438	1,522
Peramivir	393	614
Other research, preclinical and development costs	3,384	2,220
Total R&D expenses	$ 29,867	$ 27,493

Selling, general and administrative ("SG&A") expenses for the first quarter of 2020 were $15.9 million compared to $6.2 million in the first quarter of 2019. The increase was primarily due to increased spending on commercial activities and medical affairs to support the U.S. commercial launch of berotralstat in 2020 and contingent legal costs associated with our SUL arbitration proceedings.

Interest and other income was $6.4 million in the first quarter of 2020, compared to $0.6 million in the first quarter of 2019. The increase was primarily due to recognition of income from the partial arbitration award related to our SUL arbitration proceedings.

Interest expense, which is primarily related to our non-recourse notes issued in conjunction with the non-dilutive RAPIACTA royalty monetization transaction in March 2011 and borrowings under our Second Amended and Restated Senior Credit Facility, was $3.0 million in the first quarter of 2020, compared to $2.7 million in the first quarter of 2019.

A mark to market gain of $0.4 million related to our Currency Hedge Agreement was recognized in the first quarter of 2019, resulting from changes in the U.S. dollar/Japanese yen exchange rate in the related time periods.

Liquidity and Capital Resources

Cash expenditures have exceeded revenues since our inception and we expect our 2020 operating expenses to exceed our 2020 revenues. Our operations have principally been funded through public offerings and private placements of equity securities; cash from collaborative and other research and development agreements, including U.S. Government contracts for RAPIVAB and galidesivir; and to a lesser extent, the PhaRMA Notes financing and the Senior Credit Facility, the Amended and Restated Credit Facility, and the Second Amended and Restated Credit Facility. To date, we have been awarded a BARDA/HHS RAPIVAB development contract totaling $234.8 million, which expired on June 30, 2014, a NIAID/HHS galidesivir development contract totaling $43.0 million, which is ongoing, and a BARDA/HHS galidesivir development contract totaling $39.1 million, which is also ongoing. The total amount of NIAID/HHS and BARDA/HHS galidesivir funding obligated under awarded options is $43.0 million and $20.6 million, respectively. We may issue securities through private placement transactions or registered public offerings pursuant to a registration statement filed with the SEC. In addition to the above, we have received funding from other sources, including other collaborative and other research and development agreements; government grants; equipment lease financing; facility leases; research grants; and interest income on our investments.

As of March 31, 2020, we had net working capital of $32.8 million, a decrease of approximately $39.2 million from $72.0 million at December 31, 2019. The decrease in working capital was principally due to our normal operating expenses associated with the development of our product candidates. Our principal sources of liquidity at March 31, 2020 were approximately $101.9 million in cash and cash equivalents and approximately $11.2 million in investments considered available-for-sale. We anticipate our cash and investments will fund our operations into 2021.

We intend to contain costs and cash flow requirements by closely managing our third party costs and headcount, leasing scientific equipment and facilities, contracting with other parties to conduct certain research and development projects and using consultants. We expect to incur additional expenses, potentially resulting in significant losses, as we continue to pursue our research and development activities and begin to build a commercial infrastructure. We may incur additional expenses related to the filing, prosecution, maintenance, defense and enforcement of patent and other intellectual property claims and additional regulatory costs as our clinical programs advance through later stages of development. The objective of our investment policy is to ensure the safety and preservation of invested funds, as well as maintaining liquidity sufficient to meet cash flow requirements. We place our excess cash with high credit quality financial institutions, commercial companies, and government agencies in order to limit the amount of our credit exposure. We have not realized any significant losses on our investments.

We plan to finance our needs principally from the following:

- lease, royalty or loan financing and future public or private equity or debt financing;
- our existing capital resources and interest earned on that capital;
- payments under existing and executing new contracts with the U.S. Government; and
- payments under current or future collaborative and licensing agreements with corporate partners.

As our programs continue to advance, our costs will increase. Our current and planned clinical trials, plus the related development, manufacturing, regulatory approval process requirements and additional personnel resources and testing required for the continuing development of our product candidates will consume significant capital resources and will increase our expenses. Our expenses, revenues and cash utilization rate could vary significantly depending on many factors, including our ability to raise additional capital, the development progress of our collaborative agreements for our product candidates, the amount and timing of funding we receive from existing U.S. Government contracts for galidesivir, the amount of funding or assistance, if any, we receive from new U.S. Government contracts or other new partnerships with third parties for the development and or commercialization of our product candidates, the progress and results of our current and proposed clinical trials for our most advanced product candidates, the progress made in the manufacturing of our lead product candidates, commercializing our products, and the overall progression of our other programs. The impact of the ongoing COVID-19 pandemic on one or more of the foregoing factors could negatively affect our expenses, revenues and cash utilization rate.

With the funds available at March 31, 2020, we believe our financial resources will be sufficient to fund our operations into 2021. We have sustained operating losses for the majority of our corporate history and expect that our 2020 expenses will exceed our 2020 revenues. We expect to continue to incur operating losses and negative cash flows until revenues reach a level sufficient to support ongoing operations. Accordingly, our planned operations raise doubt about our ability to continue as a going concern throughout 2021. Our liquidity needs will be largely determined by the success of operations in regards to the progression of our product candidates in the future. We also may consider other plans to fund operations through 2021 including: (1) securing or increasing U.S. Government funding of our programs, including obtaining procurement contracts; (2) out-licensing rights to certain of our products or product candidates, pursuant to which we would receive cash milestones; (3) raising additional capital through equity or debt financings or from other sources; (4) obtaining additional product candidate regulatory approvals, which would generate revenue, milestones and cash flow; (5) reducing spending on one or more research and development programs, including by discontinuing development; and/or (6) restructuring operations to change our overhead structure. We may issue securities, including common stock, preferred stock, depositary shares, stock purchase contracts, warrants, debt securities and units, through private placement transactions or registered public offerings. Our future liquidity needs, and ability to address those needs, will largely be determined by the success of our product candidates, the timing, scope and magnitude of our commercial expenses and key development and regulatory events and our decisions in the future.

Our long-term capital requirements and the adequacy of our available funds will depend upon many factors, including:

- our ability to perform under our government contracts and receive reimbursement, and receive stockpiling procurement contracts;
- the magnitude of work under our government contracts;
- the progress and magnitude of our research, drug discovery and development programs;
- changes in existing collaborative relationships or government contracts;
- our ability to establish additional collaborative relationships with academic institutions, biotechnology or pharmaceutical companies and governmental agencies or other third parties;
- the extent to which our partners, including governmental agencies, will share in the costs associated with the development of our programs or run the development programs themselves;
- our ability to negotiate favorable development and marketing strategic alliances for certain product candidates or a decision to build or expand internal development and commercial capabilities;
- successful commercialization of marketed products by either us or a partner;
- the scope and results of preclinical studies and clinical trials to identify and develop product candidates;

- our ability to engage sites and enroll subjects in our clinical trials;
- the scope of manufacturing of our product candidates to support our preclinical research and clinical trials;
- increases in personnel and related costs to support the development and commercialization of our product candidates;
- the scope of manufacturing of our drug substance and product candidates required for future NDA filings;
- competitive and technological advances;
- the time and costs involved in obtaining regulatory approvals;
- post-approval commitments for RAPIVAB and other products that receive regulatory approval; and
- the costs involved in all aspects of intellectual property strategy and protection including the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims.

The impact of the ongoing COVID-19 pandemic on one or more of the foregoing factors could negatively affect our capital requirements and the availability of funds to finance those requirements.

We expect that we will be required to raise additional capital to complete the development and commercialization of our current product candidates and we may seek to raise capital in the future. Additional funding, whether through additional sales of equity or debt securities, royalty or other monetization transactions, collaborative or other arrangements with corporate partners or from other sources, including governmental agencies in general and existing government contracts specifically, may not be available when needed or on terms acceptable to us. The issuance of preferred or common stock or convertible securities, with terms and prices significantly more favorable than those of the currently outstanding common stock, could have the effect of diluting or adversely affecting the holdings or rights of our existing stockholders. In addition, collaborative arrangements may require us to transfer certain material rights to such corporate partners. Insufficient funds may require us to delay, scale back or eliminate certain of our research and development programs. Our future working capital requirements, including the need for additional working capital, will be largely determined by the advancement of our portfolio of product candidates as well as rate of reimbursement by U.S. Government agencies of our galidesivir expenses and any future decisions regarding the future of the RAPIVAB and galidesivir programs, including those relating to stockpiling procurement. More specifically, our working capital requirements will be dependent on the number, magnitude, scope and timing of our development programs; regulatory approval of our product candidates; obtaining funding from collaborative partners; the cost, timing and outcome of regulatory reviews, regulatory investigations, and changes in regulatory requirements; the costs of obtaining patent protection for our product candidates; the timing and terms of business development activities; the rate of technological advances relevant to our operations; the efficiency of manufacturing processes developed on our behalf by third parties; the timing, scope and magnitude of commercial spending, and the level of required administrative support for our daily operations.

The restrictive covenants contained in the Second Amended and Restated Senior Credit Facility could cause us to be unable to pursue business opportunities that we or our stockholders may consider beneficial without the lender's permission or without repaying all Second Amended and Restated Senior Credit Facility obligations. These covenants limit our ability to, among other things, convey, sell, lease, license, transfer or otherwise dispose of certain parts of our business or property; change the nature of our business; liquidate or dissolve; enter into certain change in control or acquisition transactions; incur or assume certain debt; grant certain types of liens on our assets; modify, liquidate or transfer assets in certain collateral accounts; pay dividends or make certain distributions to our stockholders; make certain investments; enter into material transactions with affiliates; and modify existing debt or collaboration arrangements. A breach of any of these covenants could result in an event of default under the Second Amended and Restated Senior Credit Facility.

Financial Outlook for 2020

Based upon our development and commercial plans, expected operations and our awarded government contracts, we expect 2020 operating cash usage to be in the range of $125 to $150 million, and expect our total 2020 operating expenses to be in the range of $135 to $160 million. Our operating expense range excludes equity-based compensation expense due to the difficulty in accurately projecting this expense as it is significantly impacted by the volatility and price of our stock, as well as vesting of our outstanding performance-based stock options. Our operating cash forecast excludes any impact of our royalty monetization, hedge collateral posted or returned, and any other non-routine cash outflows or inflows. Our ability to remain within our operating expense and operating cash target ranges is subject to multiple factors, including unanticipated or additional general development and administrative costs and other factors described under the Risk Factors located elsewhere in this report.

Off-Balance Sheet Arrangements

As of March 31, 2020, we do not have any unconsolidated entities or off–balance sheet arrangements.

Critical Accounting Policies

We have established various accounting policies that govern the application of U.S. GAAP, which were utilized in the preparation of our consolidated financial statements. Certain accounting policies involve significant judgments and assumptions by management that have a material impact on the carrying value of certain assets and liabilities. Management considers such accounting policies to be critical accounting policies. The judgments and assumptions used by management are based on historical experience and other factors, which are believed to be reasonable under the circumstances. Because of the nature of the judgments and assumptions made by management, actual results could differ from these judgments and estimates, which could have a material impact on the carrying values of assets and liabilities and the results of operations.

While our significant accounting policies are more fully described in Note 1 to our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2019, we believe that the following accounting policies are the most critical to aid you in fully understanding and evaluating our reported financial results and affect the more significant judgments and estimates that we use in the preparation of our financial statements.

Inventory

Our inventories consist of peramivir finished goods and work in process, which are valued at the lower of cost or net realizable value using the first-in, first-out (i.e., FIFO) method. Cost includes materials, labor, overhead, shipping and handling costs. Our inventories are subject to expiration dating. We regularly evaluate the carrying value of our inventories and provide valuation reserves for any estimated obsolete, short-dated or unmarketable inventories. In addition, we may experience spoilage of our raw materials and supplies. Our determination that a valuation reserve might be required, in addition to the quantification of such reserve, requires us to utilize significant judgment. In connection with the FDA approval of RAPIVAB and other regulatory approvals, we began capitalizing costs associated with the production of peramivir inventories.

Accrued Expenses

We enter into contractual agreements with third-party vendors who provide research and development, manufacturing, and other services in the ordinary course of business. Some of these contracts are subject to milestone-based invoicing and services are completed over an extended period of time. We record liabilities under these contractual commitments when an obligation has been incurred. This accrual process involves reviewing open contracts and purchase orders, communicating with our applicable personnel to identify services that have been performed and estimating the level of service performed and the associated cost when we have not yet been invoiced or otherwise notified of actual cost. The majority of our service providers invoice us monthly in arrears for services performed. We make estimates of our accrued expenses as of each balance sheet date based on the facts and circumstances known to us. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. Examples of estimated accrued expenses include:

- fees paid to Clinical Research Organizations (“CROs”) in connection with preclinical and toxicology studies and clinical trials;
- fees paid to investigative sites in connection with clinical trials;
- fees paid to contract manufacturers in connection with the production of our raw materials, drug substance and product candidates; and
- professional fees.

We base our expenses related to clinical trials on our estimates of the services received and efforts expended pursuant to contracts with multiple research institutions and CROs that conduct and manage clinical trials on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed and the level of effort expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we will adjust the accrual accordingly. If we do not identify costs that we have begun to incur or if we underestimate or overestimate the level of these costs, our actual expenses could differ from our estimates.

Revenue Recognition

Collaborative and Other Research and Development Arrangements and Royalties

We recognize revenue when we satisfy a performance obligation by transferring promised goods or services to a customer. Revenue is measured at the transaction price that is based on the amount of consideration that we expect to receive in exchange for transferring the promised goods or services to the customer. The transaction price includes estimates of variable consideration to the extent it is probable that a significant reversal of revenue recognized will not occur.

We have collaboration and license agreements with a number of third parties as well as research and development agreements with certain government entities. Our primary sources of revenue are license, service, royalty and product sale revenues from these collaborative and other research and development arrangements.

Revenue from license fees, royalty payments, milestone payments, and research and development fees are recognized as revenue when the earnings process is complete and we have no further continuing performance obligations or we have completed the performance obligations under the terms of the agreement.

Arrangements that involve the delivery of more than one performance obligation are initially evaluated as to whether the intellectual property licenses granted by us represent distinct performance obligations. If they are determined to be distinct, the value of the intellectual property licenses would be recognized up-front while the research and development service fees would be recognized as the performance obligations are satisfied. Variable consideration is assessed at each reporting period as to whether it is not subject to significant future reversal and, therefore, should be included in the transaction price at the inception of the contract. If a contract includes a fixed or minimum amount of research and development support, this also would be included in the transaction price. Changes to collaborations, such as the extensions of the research term or increasing the number of targets or technology covered under an existing agreement, are assessed for whether they represent a modification or should be accounted for as a new contract. For contracts with multiple performance obligations, revenue is allocated to each performance obligation based on its relative standalone selling price. Standalone selling prices are based on observable prices at which we separately sell the products or services. If a standalone selling price is not directly observable, then we estimate the standalone selling price considering market conditions and entity-specific factors. Analyzing the arrangement to identify performance obligations requires the use of judgment, and each may be an obligation to deliver services, a right or license to use an asset, or another performance obligation.

Milestone payments are recognized as licensing revenue upon the achievement of specified milestones if (i) the milestone is substantive in nature and the achievement of the milestone was not probable at the inception of the agreement; and (ii) we have a right to payment. Any milestone payments received prior to satisfying these revenue recognition criteria are recorded as deferred revenue.

Reimbursements received for direct out-of-pocket expenses related to research and development costs are recorded as revenue in the Consolidated Statements of Comprehensive Loss rather than as a reduction in expenses. Under our contracts with the Biomedical Advanced Research and Development Authority within the United States Department of Health and Human Services (”BARDA/HHS”) and the National Institute of Allergy and Infectious Diseases (“NIAID/HHS”), revenue is recognized as reimbursable direct and indirect costs are incurred.

Under certain of our license agreements, we receive royalty payments based upon our licensees’ net sales of covered products. Royalties are recognized at the later of when (i) the subsequent sale or usage occurs, or (ii) the performance obligation to which some or all of the sales-based or usage-based royalty has been satisfied.

Product Sales

Our principal sources of product sales are sales of peramivir to our licensing partners and sales of RAPIVAB to the U.S. Department of Health and Human Services under our procurement contract. We recognize revenue for sales when the customer obtains control of the product, which generally occurs upon delivery.

Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets) and deferred revenue and billings in excess of revenue recognized (contract liabilities) on the Consolidated Balance Sheets.

Contract assets - Our long-term contracts are billed as work progresses in accordance with the contract terms and conditions, either at periodic intervals or upon achievement of certain milestones. Often this results in billing occurring subsequent to revenue recognition, resulting in contract assets. Contract assets are generally classified as current assets in the Consolidated Balance Sheets.

Contract liabilities - We often receive cash payments from customers in advance of our performance, resulting in contract liabilities. These contract liabilities are classified as either current or long-term in the Consolidated Balance Sheets based on the timing of when we expect to recognize the revenue.

Contract Costs

We may incur direct and indirect costs associated with obtaining a contract. Incremental contract costs that we expect to recover are capitalized and amortized over the expected term of the contract. Non-incremental contract costs and costs that we expect to recover are expensed as incurred.

Research and Development Expenses

Our research and development costs are charged to expense when incurred. Advance payments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized. Such amounts are recognized as expense when the related goods are delivered or the related services are performed. Research and development expenses include, among other items, personnel costs, including salaries and benefits, manufacturing costs, clinical, regulatory, and toxicology services performed by CROs, materials and supplies, and overhead allocations consisting of various administrative and facilities related costs. Most of our manufacturing and clinical and preclinical studies are performed by third-party CROs. Costs for studies performed by CROs are accrued by us over the service periods specified in the contracts and estimates are adjusted, if required, based upon our on-going review of the level of services actually performed.

Additionally, we have license agreements with third parties, such as the Albert Einstein College of Medicine of Yeshiva University, Industrial Research, Ltd. and the University of Alabama at Birmingham ("UAB"), which require fees related to sublicense agreements or maintenance fees. We expense sublicense payments as incurred unless they are related to revenues that have been deferred, in which case the expenses are deferred and recognized over the related revenue recognition period. We expense maintenance payments as incurred.

Deferred collaboration expenses represent sub-license payments paid to our academic partners upon receipt of consideration from various commercial partners, and other consideration to our academic partners for modification to existing license agreements. These deferred expenses would not have been incurred without receipt of such payments or modifications from our commercial partners and are being expensed in proportion to the related revenue being recognized. We believe that this accounting treatment appropriately matches expenses with the associated revenue.

We group our R&D expenses into two major categories: direct external expenses and indirect expenses. Direct expenses consist of compensation for R&D personnel and costs of outside parties to conduct laboratory studies, develop manufacturing processes and manufacture the product candidate, conduct and manage clinical trials, as well as other costs related to our clinical and preclinical studies. These costs are accumulated and tracked by active program. Indirect expenses consist of lab supplies and services, facility expenses, depreciation of development equipment and other overhead of our research and development efforts. These costs apply to work on non-active product candidates and our discovery research efforts.

Stock-Based Compensation

All share-based payments, including grants of stock option awards and restricted stock unit awards, are recognized in our Consolidated Statements of Comprehensive Loss based on their fair values. Stock-based compensation cost is estimated at the grant date based on the fair value of the award and is recognized as expense on a straight-line basis over the requisite service period of the award. Determining the appropriate fair value model and the related assumptions for the model requires judgment, including estimating the life of an award, the stock price volatility, and the expected term. We utilize the Black-Scholes option-pricing model to value our awards and recognize compensation expense on a straight-line basis over the vesting periods. The estimation of share-based payment awards that will ultimately vest requires judgment, and to the extent actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period estimates are revised. In addition, we have outstanding performance-based stock options for which no compensation expense is recognized until "performance" has occurred. Significant management judgment is also required in determining estimates of future stock price volatility and forfeitures to be used in the valuation of the options. Actual results, and future changes in estimates, may differ substantially from our current estimates.

Currency Hedge Agreement

In connection with our issuance of the PhaRMA Notes, we entered into a foreign Currency Hedge Agreement to hedge certain risks associated with changes in the value of the Japanese yen relative to the U.S. dollar. Under the Currency Hedge Agreement, we have the right to purchase dollars and sell yen at a rate of 100 yen per dollar for which we may be required to pay a premium in 2020, provided the Currency Hedge Agreement remains in effect. A payment of $2.0 million will be required if, on May 18, the U.S. dollar is worth 100 yen or less as determined in accordance with the Currency Hedge Agreement. In conjunction with establishing the Currency Hedge Agreement, we will be required to post collateral to the counterparty, which may cause us to experience additional quarterly volatility in our financial results. We will not be required at any time to post collateral exceeding the maximum premium payments remaining payable under the Currency Hedge Agreement. As of March 31, 2020, the maximum amount of hedge collateral we may be required to post is $2.0 million.

The Currency Hedge Agreement does not qualify for hedge accounting treatment and therefore mark to market adjustments will be recognized in our Consolidated Statements of Comprehensive Loss. Mark to market adjustments are determined by quoted prices in markets that are not actively traded and for which significant inputs are observable directly or indirectly, representing the Level 2 in the fair value hierarchy as defined by generally accepted accounting principles ("U.S. GAAP"). We are also required to post collateral in connection with the mark to market adjustments based on defined thresholds. As of March 31, 2020, no collateral was posted under the agreement.

Tax

We account for uncertain tax positions in accordance with U.S. GAAP. Significant management judgment is required in determining our provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against net deferred tax assets. We have recorded a valuation allowance against all potential tax assets, due to uncertainties in our ability to utilize deferred tax assets, primarily consisting of certain net operating losses carried forward, before they expire. The valuation allowance is based on estimates of taxable income in each of the jurisdictions in which we operate and the period over which our deferred tax assets will be recoverable.

Information Regarding Forward-Looking Statements

This filing contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the "safe harbor" created in Section 21E. All statements other than statements of historical facts contained in this filing are forward-looking statements. These forward-looking statements can generally be identified by the use of words such as "may," "will," "intends," "plans," "believes," "anticipates," "expects," "estimates," "predicts," "potential," the negative of these words or similar expressions. Statements that describe our future plans, strategies, intentions, expectations, objectives, goals or prospects are also forward-looking statements. Discussions containing these forward-looking statements are principally contained in "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," as well as any amendments we make to those sections in filings with the SEC. These forward-looking statements include, but are not limited to, statements about:

- the impact of the ongoing COVID-19 pandemic on all aspects of our business, including without limitation delays, stoppages, difficulties and increased expenses with respect to our and our partners' development, regulatory and supply chain operations, or on our ability to access the capital or credit markets to finance our operations;
- the preclinical development, clinical development, commercialization, or post-marketing studies of our product candidates and products, including our HAE programs, BCX9930, BCX9250, peramivir, galidesivir, and early stage discovery programs;
- the potential funding from our contracts with NIAID/HHS and BARDA/HHS for the development of galidesivir;
- the potential for government stockpiling orders of peramivir and galidesivir, additional regulatory approvals of peramivir, or milestones, royalties or profit from sales of peramivir by us or our partners;
- the potential use of peramivir as a treatment for H1N1, H5N1, and H7N9 or other strains of influenza;
- the implementation of our business model, strategic plans for our business, products, product candidates and technology;
- our ability to establish and maintain collaborations or out-license rights to our product candidates;
- the outcome, cost and timing of any resolution of disputes and legal proceedings, including but not limited to the dispute with our partner SUL;
- plans, programs, progress and potential success of our collaborations, including SUL for peramivir, Mundipharma for mundesine, Torii for BCX7353 in Japan and Shionogi and Green Cross for peramivir in their territories;
- our and MDCP's ability to satisfy obligations under our Second Amended and Restated Senior Credit Facility;
- Royalty Sub's ability to service its payment obligations in respect of the PhaRMA Notes;
- the Currency Hedge Agreement entered into by us in connection with the issuance by Royalty Sub of the PhaRMA Notes;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- our ability to operate our business without infringing the intellectual property rights of others;
- estimates of our expenses, revenues, capital requirements, annual cash utilization, and our needs for additional financing;
- our ability to continue as a going concern;

- the timing or likelihood of regulatory filings or regulatory agreements, deferrals, and approvals;
- the timing or likelihood of entering into a U.S. government stockpile order and our ability to execute any such order;
- our ability to raise additional capital to fund our operations or repay our recourse debt obligations;
- our ability to comply with the covenants as set forth in the agreements governing our debt obligations;
- our financial performance;
- the timing and success of our anticipated commercialization of BCX7353 in the U.S. and elsewhere; and
- competitive companies, technologies and our industry.

These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under "Risk Factors." Any forward-looking statement reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, results of operations, industry and future growth. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

We are subject to interest rate risk on our investment portfolio and borrowings under our fixed-interest rate PhaRMA Notes and our variable-interest rate Second Amended and Restated Senior Credit Facility. The interest rate applicable to our borrowings under the PhaRMA Notes is fixed at 14.0% and the Second Amended and Restated Senior Credit Facility bears a floating interest rate based on LIBOR. Increases in interest rates could therefore increase the associated interest payments that we are required to make on the Second Amended and Restated Senior Credit Facility. As of March 31, 2020, our Second Amended and Restated Senior Credit Facility had an interest rate of 9.6%.

We invest in marketable securities in accordance with our investment policy. The primary objectives of our investment policy are to preserve capital, maintain proper liquidity to meet operating needs and maximize yields. Our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure to any single issue, issuer or type of investment. We place our excess cash with high credit quality financial institutions, commercial companies, and government agencies in order to limit the amount of credit exposure. Some of the securities we invest in may have market risk. This means that a change in prevailing interest rates may cause the principal amount of the investment to fluctuate.

Our investment exposure to market risk for changes in interest rates relates to the increase or decrease in the amount of interest income we can earn on our portfolio, changes in the market value due to changes in interest rates and other market factors as well as the increase or decrease in any realized gains and losses. Our investment portfolio includes only marketable securities and instruments with active secondary or resale markets to help ensure portfolio liquidity. A hypothetical 100 basis point increase or decrease in interest rates along the entire interest rate yield curve would not significantly affect the fair value of our interest sensitive financial instruments, including our borrowings, but may affect our future earnings and cash flows. We generally have the ability to hold our fixed-income investments to maturity and therefore do not expect that our operating results, financial position or cash flows will be materially impacted due to a sudden change in interest rates. However, our future investment income may fall short of expectations due to changes in interest rates, or we may suffer losses in principal if forced to sell securities which have declined in market value due to changes in interest rates or other factors, such as changes in credit risk related to the securities' issuers. To minimize this risk, we schedule our investments to have maturities that coincide with our expected cash flow needs, thus avoiding the need to redeem an investment prior to its maturity date. Accordingly, we do not believe that we have material exposure to interest rate risk arising from our investments. Generally, our investments are not collateralized. We have not realized any significant losses from our investments.

We do not use interest rate derivative instruments to manage exposure to interest rate changes. We ensure the safety and preservation of invested principal funds by limiting default risk, market risk and reinvestment risk. We reduce default risk by investing in investment grade securities.

Foreign Currency Risk

The majority of our transactions and the greatest magnitude of these transactions occur in U.S. dollars and we do not have significant operating subsidiaries or significant investments in foreign countries as of March 31, 2020. Therefore, we are not subject to significant foreign currency exchange risk in our normal operations.

In connection with the issuance by Royalty Sub of the PhaRMA Notes, we entered into a Currency Hedge Agreement to hedge certain risks associated with changes in the value of the Japanese yen relative to the U.S. dollar. Under the Currency Hedge Agreement, we are required to post collateral based on our potential obligations under the Currency Hedge Agreement as determined by periodic mark to market adjustments. Provided the Currency Hedge Agreement remains in effect, we may be required to pay an annual premium in the amount of $2.0 million in May 2020. Such payment will be required if, on May 18, the spot rate of exchange for Japanese yen-U.S. dollars (determined in accordance with the Currency Hedge Agreement) is such that the U.S. dollar is worth 100 yen or less. As of March 31, 2020, the maximum amount of hedge collateral we may be required to post is $2.0 million.

Item 4. Controls and Procedures

We maintain a set of disclosure controls and procedures that are designed to ensure that information relating to BioCryst Pharmaceuticals, Inc. required to be disclosed in our periodic filings under the Exchange Act is recorded, processed, summarized and reported in a timely manner under the Exchange Act. We carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of March 31, 2020, the Company’s disclosure controls and procedures are effective to ensure that information required to be disclosed by the Company in the reports filed or submitted by it under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and include controls and procedures designed to ensure that information required to be disclosed by the Company in such reports is accumulated and communicated to the Company’s management, including the Chief Executive Officer and Chief Financial Officer of the Company, as appropriate to allow timely decisions regarding required disclosure.

There have been no changes in our internal control over financial reporting that occurred during the quarter ended March 31, 2020 that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1A. *RISK FACTORS*

An investment in our stock involves risks. You should carefully read this entire report and consider the following uncertainties and risks, which may adversely affect our business, financial condition or results of operations, along with all of the other information included in our other filings with the Securities and Exchange Commission, before deciding to buy our common stock.

Risks Relating to Our Business

Our business, operations, clinical development or commercialization plans and timelines, and access to capital could be adversely affected by the effects of the recent COVID-19 pandemic on us or on third parties with whom we conduct business, including without limitation our development partners, manufacturers, CROs, and others, as well as on the regulatory and government agencies with whom we work.

The COVID-19 pandemic has spread to multiple countries around the world, is affecting the United States and global economies, and may cause significant disruptions to our business, operations, and clinical development or commercialization plans and timelines, as well as the business and operations of third parties with whom we conduct business. For example, quarantines, shelter-in-place and similar government orders have impacted and may continue to impact, among other things: (1) our personnel and those of third-parties on whom we rely, including our development partners (such as Torii), manufacturers, CROs, and others; (2) the conduct of our current and future clinical trials; and (3) the operations of the FDA, EMA, PMDA and other health and governmental authorities, which could result in delays of reviews and approvals.

If our operations or those of third parties with whom we conduct business are impaired or curtailed as a result of these events, the development and commercialization of our products and product candidates could be stopped or delayed, or the costs of such development and commercialization activities could increase, any of which could have a material adverse impact on our business. For example, if interruptions related to COVID-19 were to impair our or Torii’s ability to perform under the Torii Agreement to complete our regulatory interactions in Japan, including with respect to the pending Japanese NDA with respect to berotralstat for the treatment of HAE, then the timing and success of our development and commercialization of berotralstat in Japan could be severely impacted.

Our suppliers or other vendors may be unable to meet their obligations to us or perform their services as expected as a result of the COVID-19 pandemic or other health epidemics. In such circumstances, we may not be able to enter into arrangements with alternative suppliers or vendors or do so on commercially reasonable terms or in a timely manner. Such delays could adversely impact our ability to meet our desired clinical development and any future commercialization timelines. Although we carefully manage our relationships with our suppliers and vendors, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have an adverse impact on our business, financial condition and prospects.

In addition, our clinical trials may be affected by the COVID-19 pandemic. Clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the COVID-19 pandemic or concerns among patients about participating in clinical trials during a pandemic. Some patients may have difficulty following certain aspects of clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, our inability to successfully recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19 or experience additional restrictions by their institutions, city, or state could adversely impact our clinical trial operations.

If global health concerns prevent the FDA, EMA, PMDA or other regulatory authorities from conducting their inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA, EMA, PMDA or other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business and clinical development plans and timelines.

We have implemented work-from-home policies for our employees, which may negatively impact productivity, disrupt our business and delay our clinical programs and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. These and similar, and perhaps more severe, disruptions in our operations could negatively impact our business, operating results and financial condition.

The spread of COVID-19, which has caused a broad impact globally, may also materially affect our access to capital. While the potential economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, the pandemic could result in significant disruption of global financial markets, reducing our ability to access the equity or debt capital markets or obtain other sources of capital, which could negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The global pandemic of COVID-19 continues to evolve rapidly. The ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. These effects could be material, and we will continue to monitor the COVID-19 situation closely. We do not yet know the full extent and magnitude of the impacts that COVID-19 has had or will have on our business, on the healthcare system, or on the global economy. In addition, the COVID-19 pandemic could have the effect of heightening many of the other risks described below.

We have incurred losses since our inception, expect to continue to incur such losses, and may never be profitable.

Since our inception, we have not achieved sustained profitability. We expect to incur additional losses for the foreseeable future, and our losses could increase as our research and development efforts and commercial activities progress. We expect that such losses will fluctuate from quarter to quarter and losses and fluctuations may be substantial. To become profitable, we, or our collaborative partners, must successfully manufacture and develop product candidates, receive regulatory approval, and successfully commercialize and/or enter into profitable commercialization arrangements with other parties. It could be several years, if ever, before we receive significant revenue from any current or future license agreements or revenues directly from product sales.

Because of the numerous risks and uncertainties associated with developing our product candidates and their potential for commercialization, we are unable to predict the extent of any future losses. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. If we are unable to achieve and sustain profitability, the market value of our common stock will likely decline.

Our success depends upon our ability to advance our products through the various stages of development, especially through the clinical trial process, and to receive regulatory approval for the commercial sale of our products.

To receive the regulatory approvals necessary for the commercial sale of our product candidates, we or our partners must demonstrate through preclinical studies and clinical trials that each product candidate is safe and effective. The development process and related regulatory process are complex and uncertain. The preclinical and clinical development of our product candidates is susceptible to the risk of failure inherent at any stage of drug development, including failure to demonstrate efficacy and safety, the occurrence of adverse events that are severe or medically or commercially unacceptable, our or our partners’ failure to comply with trial protocols, applicable regulatory requirements, and industry standards, or a determination by the FDA or any comparable foreign regulatory authority that a product candidate may not continue development or be approved in accordance with our development plans or at all. We cannot guarantee that any preclinical studies and clinical trials will be conducted as planned or completed on schedule, if at all, or that the results of such trials will be sufficient to support regulatory approval for our product candidates.

Progression of our product candidates through the clinical development process is dependent upon our trials indicating that our product candidates have adequate safety and efficacy in the patients being treated by achieving pre-determined safety and efficacy endpoints according to the clinical trial protocols. Failure to achieve any of these endpoints in any of our programs, including berotralstat, BCX9930, BCX9250, galidesivir, and our other rare disease product candidates, could result in delays in or modifications to our trials or require the performance of additional unplanned trials. If any of our product candidates is associated with adverse events or undesirable side effects or has properties that are unexpected, we may need to abandon development or limit development of that product candidate to certain uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Product candidates that initially show promise in clinical or preclinical testing could later be found to cause undesirable or unexpected side effects that could result in delays in the development of our product candidates, significant unexpected costs, or the termination of programs. The development plans for our product candidates, including our clinical trials, may not be adequately designed or executed, which could negatively affect the outcome and analysis of study results. Because of the cost and duration of clinical trials, we may decide to discontinue development of product candidates that are unlikely to show favorable results in clinical trials, unlikely to help advance a product to the point of a meaningful collaboration, or unlikely to have reasonable commercial potential.

Undesirable or inconclusive data in our pre-clinical studies and clinical trials or side effects in humans could result in the U.S. Food and Drug Administration (the “FDA”) or foreign regulatory authorities (including, e.g., the European Medicines Agency (“EMA”), the Japanese Ministry of Health, Labor & Welfare (“MHLW”) or the U.K. Medicines and Healthcare products Regulatory Agency (“MHRA”) refusing to approve a product candidate for any targeted indications or imposing restrictions or warnings that could impact development or the ultimate commercial viability of a product candidate. In addition, the FDA or foreign regulatory authorities may determine that study data from our product candidates necessitates additional studies or study designs which differ from our planned development strategy, and such regulatory authorities may also require patient monitoring and testing or may implement restrictions or other conditions on our development activities, any of which could materially impact the cost and timing of our planned development strategy. We, our partners, the FDA, or foreign regulatory authorities may suspend or terminate clinical trials at any time if we or they believe the trial participants face unacceptable health risks.

Our ability to successfully complete the clinical development process is dependent upon many factors, including but not limited to:

- our or our partners’ ability to secure suitable clinical sites and investigators and to enroll and maintain an adequate number of patients on a timely basis or at all;
- patients that enroll in a clinical trial may not comply with the clinical trial protocol or maintain contact with investigators to provide complete data during and after treatment;
- our product candidates may not prove to be either safe or effective or may produce unfavorable or inconclusive results;
- we or our partners may decide, or be required by regulatory authorities, to suspend or terminate clinical research for various reasons, including a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate, noncompliance with regulatory requirements or their standards of conduct, or findings of undesirable effects caused by a chemically or mechanistically similar product or product candidate;
- regulatory authorities may disagree with our or our partners’ clinical trial protocols or our or their interpretation of data from preclinical studies and clinical trials;
- clinical protocols or study procedures may not be adequately designed or followed by the investigators;
- formulation improvements may not work as expected, which could negatively impact commercial demand for our product candidates;
- regulatory authorities may fail to approve or subsequently find fault with the manufacturing processes or facilities of third party manufactures with which we or our partners enter into agreements for clinical and commercial supplies;

- the supply or quantity of raw materials or manufactured product candidates or other materials necessary to conduct development activities may be insufficient, inadequate, or unavailable at an acceptable cost, and we or our partners may experience interruptions in supply;

- our or our partners' development plans may be delayed or changed as a result of changes in development strategy, the impact of new or different regulations, requirements, and guidelines, or other unexpected events or conditions;

- the cost of pre-clinical studies and clinical trials may be greater than we anticipate;

- third-party contractors, including those manufacturing our product candidates or components or ingredients thereof, or conducting clinical trials or laboratory testing on our or our partners' behalf, may fail to comply with regulatory requirements and industry standards or meet their contractual obligations in a timely manner or at all; and

- the impact of the COVID-19 pandemic on one or more of the foregoing factors.

Clinical trials are lengthy and expensive. Many of the factors listed above could result in increased clinical development costs or longer clinical development times for any of our programs. We or our partners incur substantial expense for, and devote significant time to, preclinical testing and clinical trials, yet we cannot be certain that the tests and trials will ever result in the commercial sale of a product. Even if we or our partners successfully complete clinical trials for our product candidates, we or our partners might not file the required regulatory submissions in a timely manner and may not receive regulatory approval for the product candidates, in which case would be unable to generate any revenues from product sales or licensing arrangements.

If our development collaborations with third parties, such as our development partners, contractors and contract research organizations, fail, the development of our product candidates will be delayed or stopped.

We rely heavily upon third parties for many important stages of our product candidate development, including but not limited to:

- discovery of natural proteins that cause or enable biological reactions necessary for the progression of the disease or disorder, called enzyme targets;

- execution of certain pharmacology preclinical studies and late-stage development for our compounds and product candidates;

- management of our Phase 1, 2 and 3 clinical trials, including medical monitoring, laboratory testing, and data management;

- execution of toxicology studies that may be required to obtain approval for our product candidates;

- formulation improvement strategies and methods;

- manufacturing the starting materials and drug substance required to formulate our products and the product candidates to be used in our clinical trials, toxicology studies and any potential commercial product; and

- management of certain regulatory interactions outside of the United States.

Our failure to engage in successful collaborations at any one of these stages would greatly impact our business. If we do not license enzyme targets or inhibitors from academic institutions or from other biotechnology companies on acceptable terms, our drug development efforts would suffer. Similarly, if the contract research organizations or third-party contractors that conduct our initial or late-stage clinical trials, conduct our toxicology or other studies, manufacture our starting materials, drug substance and product candidates, provide laboratory testing or other services in connection with our clinical trials, or assist with our regulatory function breach their obligations to us, perform their services inconsistent with industry standards, or fail to comply with regulatory requirements, this would delay or prevent both the development of our product candidates and the availability of any potential commercial product.

If we lose our relationship with any one or more of these parties, we could experience a significant delay in both identifying another comparable provider and then contracting for its services. We may be unable to retain an alternative provider on reasonable terms, if at all. Even if we locate an alternative provider, it is likely that this provider may need additional time to respond to our needs and may not provide the same type or level of service as the original provider. In addition, any provider that we retain will be subject to applicable FDA current Good Laboratory Practices, current Good Manufacturing Practices ("cGMP") and current Good Clinical Practices, and comparable foreign standards. We do not have control over compliance with these regulations by these providers. Consequently, if these practices and standards are not adhered to by these providers, the development and commercialization of our product candidates could be delayed. If any of the foregoing risks are realized, our business, financial condition and results of operations could be materially adversely affected.

If we fail to obtain additional financing or acceptable partnership arrangements, we may be unable to complete the development and commercialization of our product candidates or continue operations.

As our programs advance, our costs are likely to increase. Our current and planned discovery, development, approval, and commercialization efforts will require significant capital. Our expenses, revenues and cash utilization rate could vary significantly depending on many factors, including: our ability to ability to obtain regulatory approval for and successfully commercialize our product candidates, including berotralstat, BCX9930, BCX9250, and galidesivir; our ability to raise additional capital; the amount of funding we receive from partnerships with third parties for the development and commercialization of our product candidates (including, our collaborations with Torii Pharmaceutical, Ltd. ("Torii") and the U.S. Department of Health and Human Services ("BARDA/HHS and NIAID/HHS"); the commercial success of peramivir achieved by our partners; the amount or profitability of any orders for peramivir or galidesivir by any government agency or other party; the progress and results of our current and proposed clinical trials for our product candidates; and the progress made in the manufacture of our lead products and the progression of our other programs.

In order to continue future operations, progress our drug development programs, and commercialize our current product candidates, we will be required to raise additional capital. In addition to seeking strategic partnerships, transactions and government funding, we may decide to access the equity or debt markets, incur additional borrowings, or seek other sources to meet liquidity needs at any time. Additional funding, whether through additional sales of securities, additional borrowings, royalty or other monetization transactions, collaborative arrangements with partners, including corporate partners such as Torii and governmental agencies such as BARDA/HHS or NIAID/HHS, or from other sources, may not be available when needed or on terms acceptable to us. The issuance of preferred or common stock or convertible securities, with terms and prices significantly more favorable than those of our currently outstanding common stock, could have the effect of diluting or adversely affecting the holdings or rights of our existing stockholders. Additional borrowings may subject us to more restrictive covenants than are currently applicable to us under our secured credit facility with MidCap Financial, a Delaware statutory trust ("MidCap"), pursuant to the terms and conditions of our Second Amended and Restated Credit and Security Agreement, dated as of February 5, 2019, with MDCP, LLC, MidCap, and the lenders thereto (the "Second Amended and Restated Senior Credit Facility"). In addition, collaborative arrangements may require us to transfer certain material rights to such corporate partners. Insufficient funds or lack of an acceptable partnership may require us to delay, scale-back or eliminate certain of our research and development programs.

Our ability to raise additional capital when needed or at all may be limited and may greatly depend upon the success of our current drug development programs, including the progress, timeline and ultimate outcome of the development programs for our kallikrein inhibitors such as berotralstat (including but not limited to formulation progress, long-term human safety studies, and carcinogenicity, drug-drug interaction, toxicity, or other required studies), BCX9250 for the treatment of FOP, BCX9930 for diseases of the complement system, our broad-spectrum antiviral program, including galidesivir, and other rare disease product candidates, as well as any post-approval studies for RAPIVAB. In addition, constriction and volatility in the equity and debt markets, including as a result of the impacts of COVID-19, may restrict our future flexibility to raise capital when such needs arise. Furthermore, we have exposure to many different industries, financing partners and counterparties, including commercial banks, investment banks and partners (which include investors, licensing partners, and the U.S. Government) which may be unstable or may become unstable in the current economic and political environment, including as a result of the impacts of COVID-19. Any such instability may impact these parties' ability to fulfill contractual obligations to us or they might limit or place burdensome conditions upon future transactions with us. Also, it is possible that suppliers may be negatively impacted. Any such unfavorable outcomes in our current programs or unfavorable economic conditions could place severe downward pressure on the price of our common stock and may decrease opportunities to raise capital in the capital or credit markets, and further could reduce the return available on invested corporate cash, which, if severe and sustained, could have a material and adverse impact on our results of operations and cash flows and limit our ability to continue development of our product candidates.

We may not be able to continue as a going concern if we do not obtain additional capital.

We have sustained operating losses for the majority of our corporate history and expect that our 2020 expenses will exceed our 2020 revenues. We expect to continue to incur operating losses and negative cash flows until revenues reach a level sufficient to support ongoing operations.

Our liquidity needs will be largely determined by the success of operations in regards to the progression of our product candidates in the future. Our plans to alleviate the doubt regarding our ability to continue as a going concern primarily include our ability to control the timing and spending on our research and development programs and raising additional funds through equity financings. We also may consider other plans to fund operations including:

(1) securing or increasing U.S. Government funding of our programs, including obtaining additional and delivering on procurement contracts; (2) out-licensing rights to certain of our products or product candidates, pursuant to which the we would receive cash milestones and/or royalties; (3) raising additional capital through equity or debt financings or from other sources, including royalty or other monetization transactions; (4) obtaining additional product candidate regulatory approvals, which would generate revenue, milestones and cash flow; (5) reducing spending on research and development programs, including by discontinuing and suspending development; and/or (6) restructuring operations to change our overhead structure.

There can be no assurance that any of our plans will be successful or that additional capital will be available to us on reasonable terms, or at all, when needed. If we are unable to obtain sufficient additional capital, we may be forced to curtail operations, delay or stop ongoing clinical trials, cease operations altogether or file for bankruptcy.

If we or our partners do not obtain and maintain governmental approval for our product candidates, we or our partners will not be able to commercialize and sell these potential products, which would significantly harm our business because we will receive no revenue.

We or our partners must obtain regulatory approval before marketing or selling our products. If the FDA or a comparable foreign regulatory authority delays or denies regulatory approval of one of our product candidates, or revokes approval of a previously approved product, we would be unable to market or sell the product in the applicable jurisdiction and would not receive revenue from sales or licensing arrangements related thereto, which could have a material and adverse impact on our business.

The process of preparing for and obtaining regulatory approval in any jurisdiction may be lengthy and expensive, and approval is never certain. Because of the risks and uncertainties inherent to the development process, including risks and uncertainties related to the impact of COVID-19, our product candidates could take a significantly longer time to gain regulatory approval than we expect or may never gain approval. As discussed under "Risk Factors—Risks Relating to Our Business—*Our success depends upon our ability to advance our products through the various stages of development, especially through the clinical trial process, and to receive regulatory approval for the commercial sale of our products*," we or our partners may experience any number of unfavorable outcomes during or as a result of pre-clinical studies and clinical trials that could delay or prevent regulatory approval of our product candidates, or negatively impact our management's credibility, our value and our operating results.

Even if the FDA or foreign regulatory authorities approve a product candidate, the approval may limit the indicated uses for a product candidate and/or may require post-approval studies that could impair the commercial viability of a product candidate. If we receive approval to market our potential products, whether in the United States or internationally, we will continue to be subject to extensive regulatory requirements. These requirements are wide ranging and govern, among other things:

- adverse drug experience reporting regulations;
- product promotion;
- product manufacturing, including good manufacturing practice requirements; and
- product changes or modifications.

Our failure to comply with existing or future regulatory requirements for regulatory approval, or our loss of, or changes to, previously obtained approvals, could impair our ability to generate any revenues from product sales or licensing arrangements, which could have a material adverse effect on our business, financial condition, and results of operations.

We focus on rare diseases, which may create additional risks and challenges.

Because we focus on developing drugs as treatments for rare diseases, we may seek orphan drug, breakthrough therapy or fast track designations for our product candidates in the United States or the equivalent designations elsewhere in the world. Often, regulatory authorities have broad discretion in determining whether or not to grant such designations. We cannot guarantee that our product candidates will receive orphan drug status from the FDA or equivalent designations from other regulatory authorities. We also cannot guarantee that we will receive breakthrough therapy, fast track, or equivalent designations, which provide certain potential benefits such as more frequent meetings with the applicable regulatory authorities to discuss development plans, intensive guidance on efficient drug development programs, and potential eligibility for rolling review or priority review. Even if we are successful in obtaining any such designations for our product candidates, such designations may not lead to faster development or regulatory review or approval and do not increase the likelihood that our product candidates will receive marketing approval. For instance, although berotralstat for HAE prophylaxis has received Fast Track designation from the FDA, Sakigake designation from the Japanese Pharmaceuticals and Medical Devices Agency ("PMDA"), and Promising Innovative Medicine designation from the MHRA, as well as orphan drug status from the FDA, EMA, and the MHLW, we may not experience a faster development, review or approval process compared to the conventional process in the relevant jurisdictions. We may not be able to obtain or maintain these designations for berotralstat or other product candidates that receive them, and our competitors may obtain these designations for their product candidates, which could impact our ability to develop and commercialize our product candidates or compete with such competitors, which may adversely impact our business, financial condition or results of operations.

The commercial viability of any approved product could be compromised if the product is less effective than expected, causes undesirable side effects that were not previously identified, or fails to achieve market acceptance within the medical community.

If after obtaining regulatory approval of a product we or others discover that it is less effective than previously believed or causes undesirable side effects that were not previously identified, any of the following adverse events could occur:

- regulatory authorities may withdraw their approval of, or impose marketing or manufacturing restrictions on, the product, or require us or our partners to create a medication guide outlining the risks of unidentified side effects for distribution to patients;
- we or our partners may be required to recall the product, change the way the product is administered, conduct additional clinical trials, or be subject to civil or criminal penalties; and
- the product may become less competitive and our reputation may suffer.

Even after receiving regulatory approval, any product could fail to gain sufficient, or even any, market acceptance by physicians, patients, third party payors, health authorities and others in the medical community. For example, physicians are often reluctant to switch their patients from existing therapies even when new and potentially more effective or convenient treatments enter the market. Further, patients often acclimate to the therapy that they are currently taking and do not want to switch unless their physicians recommend switching products or they are required to switch therapies due to lack of reimbursement for existing therapies. If an approved product does not achieve an adequate level of market acceptance, it may not generate significant revenues. The occurrence of any of the foregoing could have a material and adverse impact on our business.

If we fail to successfully commercialize or establish collaborative relationships to commercialize certain of our product candidates, or if any partner terminates or fails to perform its obligations under agreements with us, potential revenues from commercialization of our product candidates could be reduced, delayed or eliminated.

Our business strategy is to increase the asset value of our product candidate portfolio. We believe this is best achieved by retaining full product rights or through collaborative arrangements with third parties as appropriate. As needed, potential third-party relationships could include preclinical development, clinical development, regulatory approval, marketing, sales and distribution of our product candidates.

Currently, we have established collaborative relationships with Torii for the commercialization of berotralstat in Japan, with each of SUL, Shionogi and Green Cross for the development and commercialization of peramivir, and with Mundipharma for the development and commercialization of Mundesine (forodesine). The process of establishing and implementing collaborative relationships is difficult, time-consuming and involves significant uncertainty, including:

- our partners may seek to renegotiate or terminate their relationships with us due to unsatisfactory commercial, regulatory or clinical results, including post approval clinical commitments, a change in business strategy, a change of control or other reasons;
- our contracts for collaborative arrangements may expire;
- our partners may choose to pursue alternative technologies, including those of our competitors;
- we may have disputes with a partner that could lead to litigation or arbitration, such as the recent arbitration proceeding between us and SUL, which could result in substantial costs and divert the attention of our management;
- we do not have day to day control over the activities of our partners and have limited control over their decisions;
- our ability to generate future event payments and royalties from our partners depends upon their abilities to establish the safety and efficacy of our product candidates, obtain regulatory approvals and achieve market acceptance of products developed from our product candidates;
- we or our partners may fail to properly initiate, maintain or defend our intellectual property rights, where applicable, or a party may utilize our proprietary information in such a way as to invite litigation that could jeopardize or potentially invalidate our proprietary information or expose us to potential liability;
- we or our partners may not devote sufficient capital or resources towards our product candidates; and
- we or our partners may not comply with applicable government regulatory requirements.

If we or our partners fail to fulfill our responsibilities in a timely manner, or at all, our commercialization efforts related to that collaboration could be reduced, delayed or terminated, or it may be necessary for us to assume responsibility for activities that would otherwise have been the responsibility of our partner. If we are unable to establish and maintain collaborative relationships on acceptable terms, we may have to delay or discontinue further development of one or more of our product candidates, undertake commercialization activities at our own expense or find alternative sources of funding. Any delay in the development or commercialization of our product candidates would severely affect our business, because if our product candidates do not progress through the development process or reach the market in a timely manner, or at all, we may not receive any revenues from product sales or licensing arrangements.

The results of our partnership with Torii may not meet our current expectations.

We have an agreement with Torii for the development and commercialization of berotralstat in Japan (the "Torii Agreement"). We do not have a history of working with Torii and cannot predict the success of this collaboration. Our ability to realize the expected benefits of this collaboration, including with respect to the receipt or amounts of potential milestone or royalty payments, is subject to a number of risks, including that applicable regulatory agencies may not provide adequate regulatory clearances or reimbursement approvals on a timely basis or at all, the commercial potential of berotralstat may not meet our current expectations, we or Torii may fail to comply with our respective obligations under the Torii Agreement, and third parties may fail to perform their obligations to us on a timely basis or at all.

The Torii Agreement provides for a potential milestone payment depending on the receipt and timing of regulatory approval and contingent upon receipt of a reimbursement price approval from Japan's National Health Insurance system in excess of the threshold specified in the Torii Agreement, either of which we may not receive on a timely basis or at all. The Torii Agreement also provides that we will be entitled to receive tiered royalty payments, the amounts of which will depend upon the amount of annual net sales of berotralstat in Japan during each calendar year, whether berotralstat maintains its Sakigake designation, and other factors. We remain responsible for regulatory activities with respect to berotralstat in Japan for one year after the first commercial sale. We expect to use third parties to satisfy many of our obligations under the Torii Agreement, including but not limited to our regulatory and other responsibilities in Japan. If our interactions, or those of our third party agents, are unsuccessful, we could fail to meet our obligations under the Torii Agreement, fail to receive regulatory approval of berotralstat on a timely basis or at all, receive approval of berotralstat on a narrower scope than currently anticipated, or fail to receive reimbursement authorization in excess of the specified threshold, which could negatively impact the commercial success and the partnership, impact the economic benefit expected or require additional development of berotralstat.

Torii may terminate the Torii Agreement under certain limited circumstances, including the receipt of notice that certain additional development activities are required for regulatory approval of berotralstat, if regulatory approval of berotralstat is not received prior to December 31, 2022, or upon one year's written notice after the sixth anniversary of the first commercial sale of berotralstat in Japan. If the Torii Agreement is terminated in connection with these provisions, we will no longer be entitled to receive any milestone or royalty payments thereunder, which could have a material adverse impact on our business and results of operations.

Torii will have sole control over and decision-making authority with respect to commercialization activities for berotralstat for the prevention of HAE attacks in Japan, subject to oversight from a joint steering committee. Therefore, our receipt of, and the amounts of, any royalty payments under the Torii Agreement are dependent upon Torii's successful performance of such commercialization activities. In addition, competitive products and variations in patient demand, prescription levels, reimbursement determinations or other factors may limit the commercial potential of berotralstat in Japan, which could materially reduce the amount of any royalties we would be entitled to receive under the Torii Agreement.

Under the Torii Agreement, we will be responsible for supplying Torii with its required amounts of berotralstat for commercial sale. If due to the failure of our third-party contract manufacturers to produce sufficient drug product we fail to supply to Torii the required amounts of berotralstat, then Torii's ability to successfully commercialize berotralstat in Japan could be materially impaired, and we may receive less royalty income under the Torii Agreement, or none at all.

Any of the foregoing risks could materially adversely impact our ability to obtain regulatory approval of berotralstat in Japan, the price of berotralstat in Japan, and to perform our obligations under the Torii Agreement, which could materially reduce the economic benefits of the Torii Agreement to us and impair or result in the termination of our collaboration with Torii.

We do not have a great deal of experience in commercializing our products or technologies, and our future revenue generation is uncertain.

We do not have a great deal of experience in commercializing our product candidates or technologies. We currently have limited sales, marketing and distribution capabilities, and we may be unable to establish or sufficiently increase these capabilities for products we currently, or plan to, commercialize. Our ability to receive revenue from products we or our partners commercialize is subject to several risks, including:

- we or our partners may fail to successfully complete clinical trials, or satisfy post-marketing commitments, sufficient to obtain and keep regulatory agency marketing approval;
- many competitors are more experienced and have significantly more resources, and their products could reach the market faster, be more cost effective or have a better efficacy or tolerability profile than our product candidates;
- we may fail to employ a comprehensive and effective intellectual property strategy, which could result in decreased commercial value of our Company and our products;
- we may fail to employ a comprehensive and effective regulatory strategy, which could result in a delay or failure in commercialization of our products;
- our ability to successfully commercialize our products is affected by the competitive landscape, which cannot be fully known at this time;
- reimbursement is constantly changing, which could greatly affect usage of our products;
- future revenue from product sales would depend on our ability to successfully complete clinical studies, obtain regulatory approvals, and manufacture, market and commercialize our approved drugs; and
- the impact of the COVID-19 pandemic on us or our partners.

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

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs and, if any of our product candidates currently in development receive marketing approval, sales, marketing and distribution. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Because we have limited manufacturing experience, we depend on third-party manufacturers to manufacture our products, product candidates and the materials for our product candidates. Often, especially early in the development and commercialization process, we have only one source for manufacturing. If we cannot rely on existing third-party manufacturers, we will be required to incur significant costs and potential delays in finding new third-party manufacturers.

We have limited manufacturing experience and only a small scale manufacturing facility. We currently rely upon a very limited number of third-party manufacturers to manufacture the materials required for our products, product candidates and most of the preclinical and clinical quantities of our product candidates. We depend on these third-party manufacturers to perform their obligations in a timely manner and in accordance with applicable governmental regulations. Our third-party manufacturers, which may be the only manufacturer we have engaged for a particular product, may encounter difficulties with meeting our requirements, including but not limited to problems involving:

- inconsistent production yields;
- product liability claims or recalls of commercial product;
- difficulties in scaling production to commercial and validation sizes;
- interruption of the delivery of materials required for the manufacturing process;
- scheduling of plant time with other vendors or unexpected equipment failure;
- potential catastrophes that could strike their facilities or have an effect on infrastructure;

- potential impurities in our drug substance or products that could affect availability of product for our clinical trials or future commercialization;
- poor quality control and assurance or inadequate process controls; and
- lack of compliance or cooperation with regulations and specifications or requests set forth by the FDA or other foreign regulatory agencies or local customs, particularly associated with berotralstat, BCX9930, BCX9250, galidesivir, peramivir and our early stage compounds.

These contract manufacturers may not be able to manufacture the materials required for our product candidates at a cost or in quantities necessary to make them commercially viable. Our raw materials, drug substances, and product candidates are manufactured by a limited group of suppliers, including some at a single facility. If any of these suppliers were unable to produce these items, this could significantly impact our supply of product candidate material for further preclinical testing and clinical trials. We also have no control over whether third-party manufacturers breach their agreements with us or whether they may terminate or decline to renew agreements with us. To date, our third-party manufacturers have met our manufacturing requirements, but they may not continue to do so. Furthermore, changes in the manufacturing process or procedure, including a change in the location where the drug is manufactured or a change of a third-party manufacturer, may require prior review and approval in accordance with the FDA's cGMP and comparable foreign requirements. This review may be costly and time-consuming and could delay or prevent the launch of a product. The FDA or foreign regulatory authorities may at any time implement new standards, or change their interpretation and enforcement of existing standards for manufacture, packaging or testing of products. If we or our contract manufacturers are unable to comply, we or they may be subject to regulatory action, civil actions or penalties any of which could be costly to us and could result in a delay or shortage of product.

If we are unable to maintain current manufacturing or other contract relationships, or enter into new agreements with additional manufacturers on commercially reasonable terms, or if there is poor manufacturing performance or failure to comply with any regulatory agency on the part of any of our third-party manufacturers, we may not be able to complete development of, obtain timely approval of, or commercialize, our product candidates.

Commercialization of peramivir by our partners is subject to the potential commercialization risks described herein and numerous additional risks. Any potential revenue benefits to us in the form of milestone payments, royalties or other consideration are highly speculative.

Commercialization success of peramivir is uncertain and is subject to all the risks and uncertainties disclosed in our other risk factors relating to drug development and commercialization. In addition, commercialization of peramivir products is subject to further risks and may be negatively impacted by a number of factors, including, but not limited to, the following:

- peramivir may not prove to be adequately safe and effective for market approval in markets other than the United States, Canada, Japan, Korea, Taiwan, Australia and the European Union ("EU");
- necessary funding for post-marketing commitments and further development of peramivir may not be available timely, at all, or in sufficient amounts;
- flu prevention or pandemic treatment concerns may not materialize at all, or in the near future;
- advances in flu vaccines or other antivirals, including competitive i.v. antivirals, could substantially replace potential demand for peramivir;
- a limited number of governmental entities are expected to be the primary potential stockpiling customers for peramivir and if we are not successful at marketing peramivir to these entities for any reason, we will not receive substantial revenues from stockpiling orders;
- government and third party payors may not provide sufficient coverage or reimbursement which would negatively impact the demand for peramivir;
- we may not be able to supply commercial material to our partners and our partners may not be able to maintain or establish sufficient and acceptable commercial manufacturing, either directly or through third-party manufacturers;
- the commercial demand and acceptance for peramivir by healthcare providers and by patients may not be sufficient to result in substantial revenues of peramivir to our partners and may result in little to no milestones or royalties to us;
- effectiveness of marketing and commercialization efforts for peramivir by our partners;
- market satisfaction with existing alternative therapies;
- perceived efficacy relative to other available therapies;

- disease prevalence;
- cost of treatment;
- pricing and availability of alternative products;
- marketing and sales activities of competitors;
- shifts in the medical community to new treatment paradigms or standards of care; and
- relative convenience and ease of administration.

We face intense competition, and if we are unable to compete effectively, the demand for our products, if any, may be reduced.

The biotechnology and pharmaceutical industries are highly competitive and subject to rapid and substantial technological change. There are many companies seeking to develop products for the same indications that we currently target. Our competitors in the United States and elsewhere are numerous and include, among others, major multinational pharmaceutical and chemical companies and specialized biotechnology firms. Most of these competitors have greater resources than we do, including greater financial resources, larger research and development staffs and more experienced marketing and manufacturing organizations. In addition, most of our competitors have greater experience than we do in conducting clinical trials and obtaining FDA and other regulatory approvals. Accordingly, our competitors may succeed in obtaining FDA or other regulatory approvals of product candidates more rapidly than we do. Companies that complete clinical trials, obtain required regulatory approvals, and commence commercial sale of their drugs before we do may achieve a significant competitive advantage, including patent and FDA exclusivity rights that would delay our ability to market products. We face, and will continue to face, competition in the licensing of potential product candidates for desirable disease targets, licensing of desirable product candidates, and development and marketing of our product candidates from academic institutions, government agencies, research institutions and biotechnology and pharmaceutical companies. This includes competition with respect to, among other things, galidesivir as a potential treatment for COVID-19. Competition may also arise from, among other things:

- other drug development technologies;
- methods of preventing or reducing the incidence of disease, including vaccines; and
- new small molecule or other classes of therapeutic agents.

Developments by others may render our product candidates or technologies obsolete or noncompetitive.

We are performing research on or developing products for the treatment of several rare diseases, including HAE, diseases of the complement system, and FOP, as well as developing broad spectrum antivirals for use as medical countermeasures. We expect to encounter significant competition for any of the pharmaceutical products we are developing and plan to develop. Companies that complete clinical trials, obtain required funding or government support, obtain required regulatory approvals and commence commercial sales or stockpiling orders of their products before their competitors may achieve a significant competitive advantage. There are licensed therapies for HAE (including Berinert®, Haegarda®, Cinryze®, Kalbitor®, Takhzyro®, Firazyr® (icatibant) and generic icatibant), therapies for certain complement-mediated diseases such as PNH, aHUS, myasthenia gravis, and neuromyelitis optica specrtum disorder (Soliris® and Ultomiris™), products for the prevention or treatment of influenza (seasonal flu vaccines, Tamiflu® (oseltamivir), generic oseltamivir, Relenza®, and Inavir®, favipiravir, and Xofluza™), remdesivir as a potential treatment for COVID-19 and a number additional of products in clinical development in these therapeutic areas and for the treatment of FOP. In addition, various government entities throughout the world may offering incentives, grants and contracts to encourage additional investment into preventative and therapeutic agents against viruses such as influenza, coronavirus, Ebola, and others, which may have the effect of further increasing the number of our competitors and/or providing advantages to certain competitors. See "Business—Competition" in our Annual Report on Form 10-K for the year ended December 31, 2020 for further discussion of our competitors, competitive products or programs, and the competitive conditions in these and other therapeutic areas.

If one or more of our competitors' products or programs, including potential competitors not currently identified, are successful, the market for our products may be reduced or eliminated.

Compared to us, many of our competitors and potential competitors have substantially greater:

- capital resources;
- research and development resources, including personnel and technology;

- regulatory experience;
- preclinical study and clinical testing experience;
- manufacturing and marketing experience; and
- production facilities.

Any of these competitive factors could impede our funding efforts, render technology and product candidates noncompetitive or eliminate or reduce demand for our product candidates.

We are subject to various laws and regulations related to our products and product candidates and, if we or our partners do not comply with these laws and regulations, we could face substantial penalties.

Our or our partners' activities related to approved products, such as RAPIVAB/ALPIVAB (peramivir), or, following their regulatory approval, any of our product candidates under development, such as berotralstat, BCX9930, BCX925, and galidesivir, are subject to regulatory and law enforcement authorities in the United States (including the FDA, the Federal Trade Commission, the Department of Justice, and state and local governments) and their foreign equivalents (including the EMA, MHLW, MHRA, and others).

We are responsible for reporting adverse drug experiences, have responsibility for certain post-approval studies, and may have responsibilities and costs related to a recall or withdrawal of RAPIVAB/ALPIVAB from sale in the jurisdictions in which it is approved. We may also incur liability associated with RAPIVAB/ALPIVAB manufacturing contracted by us or in support of any of our partners. We are required to maintain records and provide data and reports to regulatory agencies related to RAPIVAB/ALPIVAB (e.g. risk evaluation and mitigation strategies, track and trace requirements, adverse events), and we may incur certain promotional regulatory and government pricing risks, all of which could have a material adverse impact on our operations and financial condition. Similar responsibilities would apply upon regulatory approval of any of our other product candidates currently under development.

In addition, we are subject to the federal physician sunshine act and certain similar physician payment and drug pricing transparency legislation in various states. We are also subject to various federal and state laws pertaining to health care "fraud and abuse," including both federal and state anti-kickback and false claims laws. Outside of the United States, we may be subject to analogous foreign laws and regulations in the various jurisdictions in which we operate. These laws and regulations apply to our or our partners' operations, sales and marketing practices, price reporting, and relationships with physicians and other customers and third-party payors. Anti-kickback laws generally prohibit a manufacturer from soliciting, offering, receiving, or paying any remuneration to generate business, including the purchase or prescription of a particular drug. Although the specific provisions of these laws vary, their scope is generally broad and there may be no regulations, guidance or court decisions that clarify how the laws apply to particular industry practices. False claims laws prohibit anyone from knowingly and willingly presenting, or causing to be presented for payment to third party payors (including Medicare and Medicaid) claims for reimbursement or services that are false or fraudulent, claims for items or services not provided as claimed, or claims for medically unnecessary items or services. The sunshine provisions apply to manufacturers with products reimbursed under certain government programs and require those manufacturers to disclose annually to the federal government certain payments made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as, ownership and investment interests held by physicians (as defined above) and their immediate family members. State laws may also require disclosure of pharmaceutical pricing information and marketing expenditures. Although we seek to comply with these statutes, it is possible that our practices, or those of our partners, might be challenged under health care fraud and abuse, anti-kickback, false claims or similar laws. Violations of the physician sunshine act and similar legislation or the fraud and abuse laws may be punishable by civil or criminal sanctions, including fines and civil monetary penalties, and future exclusion from participation in government healthcare programs.

The principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to certain regulatory authorities, including the FDA and comparable foreign regulatory authorities. Consequently, the FDA or other regulatory authority may conclude that a financial relationship between us and a principal investigator creates a conflict of interest or otherwise affects interpretation of the study. In the event of a conflict of interest with respect to a study, the integrity of the data generated at the applicable clinical trial site may be questioned or the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or other regulatory authority, as the case may be, and may ultimately lead to the denial of marketing approval of one or more of our product candidates.

We have a number of outstanding post-approval commitments to the FDA and EMA that we retain, which we may not complete successfully or on time for any number of reasons, including but not limited to lack of funds to complete the studies and insufficient interest by appropriate sites, investigators or study subjects. For example, as a condition of the approval of RAPIVAB/ALPIVAB, we were required to complete pediatric patient trials and to submit the final results of these clinical trials to the FDA and EMA. We may be subject to penalties if we fail to comply with post-approval legal and regulatory requirements and our products could be subject to continual recordkeeping and reporting requirements, review and periodic inspections by the FDA and other regulatory bodies. Regulatory approval of a product may be subject to limitations on the indicated uses for which the product may be marketed or to the other restrictive conditions of approval that limit our ability to promote, sell or distribute a product. Furthermore, the approval of RAPIVAB/ALPIVAB and any other future product candidates may be subject to requirements for costly post-approval testing and surveillance to monitor its safety or efficacy.

Advertising and promotion are subject to stringent FDA rules and oversight and as an NDA-holder we may be held responsible for any advertising and promotion that is not in compliance with the rules and regulations. In particular, the claims in all promotional materials and activities must be consistent with the FDA approvals for approved products, and must be appropriately substantiated and fairly balanced with information on the safety risks and limitations of the products. Adverse event information concerning approved products must be reviewed and as an NDA-holder we are required to make expedited and periodic adverse event reports to the FDA and other regulatory authorities. In addition, the research, manufacturing, distribution, sale and promotion of products are potentially subject to regulation by various federal, state and local authorities in addition to the FDA, including the Centers for Medicare and Medicaid Services, other divisions of the U.S. Department of Health and Human Services, the U.S. Department of Justice and individual U.S. Attorney offices within the Department of Justice, state and local governments, and foreign equivalents of the foregoing. All of these activities are also potentially subject to healthcare false claims and fraud and abuse laws, as well as consumer protection and unfair competition laws.

If our operations with respect to RAPIVAB/ALPIVAB or our other products that are subject to healthcare laws and regulations are found to be in violation of any of the healthcare fraud and abuse laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with all applicable fraud and abuse laws may be costly.

International expansion of our business exposes us to business, regulatory, political, operational, financial, and economic risks.

Our business strategy includes international expansion, including the commercialization of products outside of the United States. We currently conduct clinical studies and regulatory activities and have hired, and expect to continue hiring, employees outside of the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting, and changing laws and regulations such as privacy and data regulations, transparency regulations, tax laws, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits, and licenses;
- introduction of new health authority requirements and/or changes in health authority expectations;
- failure by us or our partners to obtain and maintain regulatory approvals for the use of our products in various countries;
- complexities and difficulties in obtaining protection for, and enforcing, our intellectual property;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors, or patient self-pay systems;
- limits on our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products, and exposure to foreign currency exchange rate fluctuations;
- natural disasters and political and economic instability, including wars, terrorism, political unrest, results of certain elections and votes, actual or threatened public health emergencies and outbreak of disease (including for example, the recent coronavirus outbreak), boycotts, adoption or expansion of government trade restrictions, and other business restrictions;
- certain expenses including, among others, expenses for travel, translation, and insurance;

- regulatory and compliance risks that relate to maintaining accurate information and control over commercial operations and activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, or FCPA, including its books and records provisions or anti-bribery provisions, or the U.K. Bribery Act and similar foreign laws and regulations; and
- regulatory and compliance risks relating to doing business with any entity that is subject to sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury.

Any of these factors could significantly harm our future international expansion of operations and, consequently, our business and results of operations.

Additionally, in some countries, such as Japan and the countries of the EU, the pricing of prescription pharmaceuticals is subject to governmental control and access. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we or our partners may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be materially harmed.

Our employees and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements, which could cause significant liability for us and harm our reputation.

We are subject to the risk of fraud or other misconduct by our employees and consultants, including intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately or disclose unauthorized activities to us. Employee and consultant misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee and consultant misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws, standards or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

We and our partners may be subject to new legislation, regulatory proposals and healthcare payor initiatives that may increase our costs of compliance and adversely affect our or our partners' ability to market our products, obtain collaborators and raise capital.

The Patient Protection and Affordable Care Act, or PPACA, made extensive changes to the delivery of health care in the U.S. The PPACA included numerous provisions that affect pharmaceutical companies, some of which became effective immediately and others of which have taken effect over the past several years. For example, the PPACA expanded health care coverage to the uninsured through private health insurance reforms and an expansion of Medicaid. The PPACA also imposed substantial costs on pharmaceutical manufacturers, such as an increase in liability for rebates paid to Medicaid, new drug discounts that must be offered to certain enrollees in the Medicare prescription drug benefit, an annual fee imposed on all manufacturers of brand prescription drugs in the U.S., and an expansion of an existing program requiring pharmaceutical discounts to certain types of hospitals and federally subsidized clinics. The PPACA also contains cost containment measures that could reduce reimbursement levels for health care items and services generally, including pharmaceuticals. It also required reporting and public disclosure of payments and other transfers of value provided by pharmaceutical companies to physicians and teaching hospitals.

We expect that the current presidential administration and U.S. Congress may continue to seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the PPACA or undertake other reforms that impact the pharmaceutical industry. For instance, the Trump administration has taken several executive actions, including the issuance of a number of executive orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. An under-staffed FDA could result in delays in the FDA's responsiveness or in its ability to review submissions or applications within the established Prescription Drug User Fee Act time frames, issue regulations or guidance, or implement or enforce regulatory requirements in a timely fashion or at all. There is still significant uncertainty with respect to the impact that the current presidential administration and the U.S. Congress may have on the PPACA specifically and the healthcare industry generally, and any changes will likely take time to unfold. As such, we cannot predict what effect the PPACA or other healthcare reform initiatives that may be adopted in the future will have on our business.

The continuing efforts of the government, insurance companies, managed care organizations and other payors of health care services to contain or reduce costs of health care could result in decreased net revenues from our pharmaceutical products and decrease potential returns from our development efforts. In addition, pharmaceutical and device manufacturers are also required to report and disclose certain payments and transfers of value to, and investment interests held by, physicians and their immediate family members during the preceding calendar year. Failure to submit required information may result in civil monetary penalties for payments, transfers of value or ownership or investment interests not reported in an annual submission. Compliance with the PPACA and state laws with similar provisions is difficult and time consuming, and companies that do not comply with these state laws face civil penalties. Because of the breadth of these laws and the narrowness of the safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Such a challenge could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

In addition, there have been a number of other legislative and regulatory proposals aimed at changing the pharmaceutical industry. For example, legislation has been enacted in certain states and at a federal level that requires development of an electronic pedigree to track and trace each prescription drug at the saleable unit level through the distribution system. Compliance with these electronic pedigree requirements may increase our operational expenses and impose significant administrative burdens. In addition, our compliance may be deemed insufficient and we could face a material adverse effect on our business, financial condition, results of operations and growth prospects. As a result of these and other new proposals, we may determine to change our current manner of operation, provide additional benefits or change our contract arrangements, any of which could have a material adverse effect on our business, financial condition and results of operations.

Adequate coverage and reimbursement in the U.S. and other markets is critical to the commercial success of RAPIVAB or any other product that we might bring to market. Recently in the U.S. there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed bills designed to, among other things, reform government program reimbursement methodologies. Individual states in the United States have been increasingly active in passing legislation and implementing regulations designed to control pharmaceutical 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. Regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. Third-party payors are increasingly challenging the prices charged for medical products and services and, in some cases, imposing restrictions on the coverage of particular drugs. Many third-party payors negotiate the price of medical services and products and develop formularies which establish pricing and reimbursement levels. Exclusion of a product from a formulary can lead to its sharply reduced usage in the third-party payor’s patient population. The process for obtaining coverage can be lengthy and costly, and we expect that it could take several months before a particular payor initially reviews our product and makes a decision with respect to coverage. For example, third-party payors may require cost-benefit analysis data from us in order to demonstrate the cost-effectiveness of RAPIVAB or any other product we might bring to market. For any individual third-party payor, we may not be able to provide data sufficient to gain reimbursement on a similar or preferred basis to competitive products, or at all which may have a material adverse effect on our business, financial condition and results of operations.

If we fail to adequately protect or enforce our intellectual property rights or secure rights to patents of others, the value of those rights would diminish.

Our success will depend in part on our ability and the abilities of our partners to obtain, protect and enforce viable intellectual property rights including but not limited to trade name, trademark and patent protection for our Company and its products, methods, processes and other technologies we may license or develop, to preserve our trade secrets, and to operate without infringing the proprietary rights of third parties both domestically and abroad. The patent position of biotechnology and pharmaceutical companies is generally highly uncertain, involves complex legal and factual questions and has recently been the subject of much litigation. Neither the United States Patent and Trademark Office (“USPTO”), the Patent Cooperation Treaty offices, nor the courts of the United States and other jurisdictions have consistent policies nor predictable rulings regarding the breadth of claims allowed or the degree of protection afforded under many biotechnology and pharmaceutical patents. Further, we may not have worldwide patent protection for all of our product candidates and our intellectual property rights may not be legally protected or enforceable in all countries throughout the world. In some jurisdictions, some of our product candidates in certain programs, including our HAE program, may have short or no composition of matter patent life and we may therefore rely on orphan drug exclusivity or data exclusivity. There can be no assurance that we will obtain orphan drug exclusivity or data exclusivity in every jurisdiction. Further, in some jurisdictions, we may rely on formulation patents or method of use patents. Both the ability to achieve issuance and the enforcement of formulation and method of use patents can be highly uncertain and can vary from jurisdiction to jurisdiction, and such patents may therefore not adequately prevent competitors and potential infringers in some jurisdictions. The validity, scope, enforceability and commercial value of the rights protected by such patents, therefore, is highly uncertain.

We also rely on trade secrets to protect technology in cases when we believe patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. If we cannot maintain the confidentiality of our technology and other confidential information in connection with our collaborators and advisors, our ability to receive patent protection or protect our proprietary information may be imperiled.

We may be involved in legal proceedings to protect or enforce our patents, the patents of our partners 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 and unsuccessful. An adverse result in any legal proceeding could put one or more of our patents at risk. Our success depends in part on avoiding the infringement of other parties' patents and other intellectual property rights as well as avoiding the breach of any licenses relating to our technologies and products. In the United States, patent applications filed in recent years are confidential for 18 months, while older applications are not published until the patent issues. As a result, avoiding patent infringement may be difficult and we may inadvertently infringe third-party patents or proprietary rights. These third parties could bring claims against us, our partners or our licensors that even if resolved in our favor, could cause us to incur substantial expenses and, if resolved against us, could additionally cause us to pay substantial damages. Further, if a patent infringement suit were brought against us, our partners or our licensors, we or they could be forced to stop or delay research, development, manufacturing or sales of any infringing product in the country or countries covered by the patent we infringe, unless we can obtain a license from the patent holder. Such a license may not be available on acceptable terms, or at all, particularly if the third party is developing or marketing a product competitive with the infringing product. Even if we, our partners or our licensors were able to obtain a license, the rights may be nonexclusive, which would give our competitors access to the same intellectual property.

If we or our partners are unable or fail to adequately initiate, protect, defend or enforce our intellectual property rights in any area of commercial interest or in any part of the world where we wish to seek regulatory approval for our products, methods, processes and other technologies, the value of the product candidates to produce revenue would diminish. Additionally, if our products, methods, processes, and other technologies or our commercial use of such products, processes, and other technologies, including but not limited to any trade name, trademark or commercial strategy infringe the proprietary rights of other parties, we could incur substantial costs. The USPTO and the patent offices of other jurisdictions have issued to us a number of patents for our various inventions and we have in-licensed several patents from various institutions. We have filed additional patent applications and provisional patent applications with the USPTO. We have filed a number of corresponding foreign patent applications and intend to file additional foreign and U.S. patent applications, as appropriate. We have also filed certain trademark and trade name applications worldwide. We cannot assure you as to:

- the degree and range of protection any patents will afford against competitors with similar products;
- if and when patents will issue;
- if patents do issue we cannot be sure that we will be able to adequately defend such patents and whether or not we will be able to adequately enforce such patents; or
- whether or not others will obtain patents claiming aspects similar to those covered by our patent applications.

If the USPTO or other foreign patent office upholds patents issued to others or if the USPTO grants patent applications filed by others, we may have to:

- obtain licenses or redesign our products or processes to avoid infringement;
- stop using the subject matter claimed in those patents; or
- pay damages.

We may initiate, or others may bring against us, litigation or administrative proceedings related to intellectual property rights, including proceedings before the USPTO or other foreign patent office. Any judgment adverse to us in any litigation or other proceeding arising in connection with a patent or patent application could materially and adversely affect our business, financial condition and results of operations. In addition, the costs of any such proceeding may be substantial whether or not we are successful.

Our success is also dependent upon the skills, knowledge and experience, none of which is patentable, of our scientific and technical personnel. To help protect our rights, we require all employees, consultants, advisors and partners to enter into confidentiality agreements that prohibit the disclosure of confidential information to anyone outside of our company and require disclosure and assignment to us of their ideas, developments, discoveries and inventions. These agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information, and if any of our proprietary information is disclosed, our business will suffer because our revenues depend upon our ability to license or commercialize our product candidates and any such events would significantly impair the value of such product candidates.

We face risks related to our government-funded programs; if BARDA/HHS or NIAID/HHS were to eliminate, reduce or delay funding from our contracts, this would have a significant negative impact on the programs associated with such funding and could have a significant negative impact on our revenues and cash flows.

We have completed work under a contract with BARDA/HHS for the development of RAPIVAB and have entered into contracts with BARDA/HHS and NIAID/HHS for the development of galidesivir as a treatment for diseases caused by RNA pathogens, including Marburg virus disease, Yellow Fever and Ebola virus disease. In contracting with these government agencies, we are subject to various U.S. Government contract requirements, including general clauses for a cost-reimbursement research and development contract, which may limit our reimbursement or, if we are found to be in violation, could result in contract termination. If the U.S. Government terminates any of its contracts with us for its convenience, or if we default by failing to perform in accordance with the contract schedule and terms, significant negative impact on our cash flows and operations could result.

U.S. Government contracts typically contain a number of extraordinary provisions that would not typically be found in commercial contracts and which may create a disadvantage and additional risks to us as compared to competitors that do not rely on U.S. Government contracts. These risks include the ability of the U.S. Government to unilaterally:

- terminate or reduce the scope of our contract with or without cause;
- interpret relevant regulations (federal acquisition regulation clauses);
- require performance under circumstances which may not be favorable to us;
- require an in process review where the U.S. Government will review the project and its options under the contract;
- control the timing and amount of funding, which impacts the development progress of our programs; and
- audit and object to our contract-related costs and fees, including allocated indirect costs.

The U.S. Government may terminate its contracts with us either for its convenience or if we default by failing to perform in accordance with the contract schedule and terms. Termination for convenience provisions generally enable us to recover only our costs incurred or committed, and settlement expenses and profit on the work completed prior to termination. Termination does not permit these recoveries under default provisions. In the event of termination or upon expiration of a contract, the U.S. Government may dispute wind-down and termination costs and may question prior expenses under the contract and deny payment of those expenses. Should we choose to challenge the U.S. Government for denying certain payments under a contract, such a challenge could subject us to substantial additional expenses which we may or may not recover. Further, if the U.S. Government terminates its contracts with us for its convenience, or if we default by failing to perform in accordance with the contract schedule and terms, significant negative impact on our cash flows and operations could result.

As a U.S. Government contractor, we are required to comply with applicable laws, regulations and standards relating to our accounting practices and are subject to periodic audits and reviews. As part of any such audit or review, the U.S. Government may review the adequacy of, and our compliance with, our internal control systems and policies, including those relating to our purchasing, property, estimating, compensation and management information systems. Audits under the active BARDA/HHS and NIAID/HHS galidesivir contracts may occur at the election of the U.S. Government and have been concluded through fiscal 2015; all subsequent fiscal years are still open and auditable. Based on the results of its audits, the U.S. Government may adjust our contract-related costs and fees, including allocated indirect costs. This adjustment could impact the amount of revenues reported on a historic basis and could impact our cash flows under the contracts prospectively. In addition, in the event BARDA/HHS or NIAID/HHS determines that certain costs and fees were unallowable or determines that the allocated indirect cost rate was higher than the actual indirect cost rate, BARDA/HHS or NIAID/HHS would be entitled to recoup any overpayment from us as a result. In addition, if an audit or review uncovers any improper or illegal activity, we may be subject to civil and criminal penalties and administrative sanctions, including termination of our contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. Government. We could also suffer serious harm to our reputation if allegations of impropriety were made against us. In addition, under U.S. Government purchasing regulations, some of our costs may not be reimbursable or allowed under our contracts. Further, as a U.S. Government contractor, we are subject to an increased risk of investigations, criminal prosecution, civil fraud, whistleblower lawsuits and other legal actions and liabilities as compared to private sector commercial companies.

We face an inherent risk of liability in the event that the use or misuse of our products results in personal injury or death and our product liability insurance coverage may be insufficient.

If the use or misuse of peramivir, forodesine or any other regulatory body-approved products we or a partner may sell in the future harms people, we may be subject to costly and damaging product liability claims brought against us by consumers, healthcare providers, pharmaceutical companies, third-party payors or others. The use of our product candidates in clinical trials, including post marketing clinical studies, could also expose us to product liability claims. We cannot predict all of the possible harms or side effects that may result from the use of our products or the testing of product candidates and, therefore, the amount of insurance coverage we currently have may not be adequate to cover all liabilities or defense costs we might incur. A product liability claim or series of claims brought against us could give rise to a substantial liability that could exceed our resources. Even if claims are not successful, the costs of defending such claims and potential adverse publicity could be harmful to our business.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face even greater risks upon any commercialization by us of our product candidates. We have product liability insurance covering our clinical trials. Clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to obtain sufficient insurance or increase our existing coverage at a reasonable cost to protect us against losses that could have a material adverse effect on our business. An individual may bring a product liability claim against us if one of our products or product candidates causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any product liability claim brought against us, with or without merit, could result in:

- liabilities that substantially exceed our product liability insurance, which we would then be required to pay from other sources, if available;
- an increase of our product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, or at all;
- withdrawal of clinical trial volunteers or patients;
- damage to our reputation and the reputation of our products, resulting in lower sales;
- regulatory investigations that could require costly recalls or product modifications;
- litigation costs; and
- the diversion of management’s attention from managing our business.

There are risks related to the potential government use or sale of our antivirals.

Government use or sale, in emergency situations or otherwise, of our antivirals—including peramivir for the treatment of influenza or galidesivir as a potential treatment for COVID-19—may result in risks to us or our collaborative partners. There can be no assurance that government use of our antivirals (whether as indicated or outside of their current indications) will prove to be generally safe, well-tolerated and effective. Any government sale or use (on an emergency basis or otherwise) of our antivirals in any country may create liabilities for us or our partners.

We have entered into a contract with the CDC for the procurement of up to 50,000 doses of RAPIVAB (peramivir injection) over a five-year period. In addition, we have opened enrollment into a randomized, double-blind, placebo-controlled clinical trial to assess the safety, clinical impact and antiviral effects of galidesivir in patients with COVID-19. The trial is being funded by NIAID/HHS. We are in active dialogue with NIAID/HHS, relevant U.S. public health authorities, and clinical investigators as they assess potential approaches to evaluate investigational antiviral drugs for treatment of COVID-19, with the goal of determining if galidesivir is effective against SARS-CoV-2, the virus that causes COVID-19, and expanding the current supply of the drug. There can be no assurance that we or our manufacturers will be able to fully meet the demand for such antivirals with respect to these or future arrangements. Further, we may not receive a favorable purchase price for future orders of our antivirals by governmental entities. Our competitors may develop products that could compete with or replace any antivirals selected for government sale or use. We may face competition in markets where we have no existing intellectual property protection or are unable to successfully enforce our intellectual property rights.

There can be no assurance that the non-U.S. partnerships that we have entered into for peramivir will result in any order for peramivir in those countries or that peramivir will be approved for any use or will achieve market approval in additional countries. There can be no assurance that galidesivir will be approved for use in any countries. In the event that any emergency use or market approval is granted in any country, there can be no assurance that any government order or commercialization of the applicable product or product candidate in such countries will be substantial or will be profitable to us.

If we fail to reach milestones or to make annual minimum payments or otherwise breach our obligations under our license agreements, our licensors may terminate our agreements with them and seek additional remedies.

If we are unable or fail to meet payment obligations, performance milestones relating to the timing of regulatory filings, product supply obligations, post approval commitments, or development and commercial diligence obligations; are unable or fail to make milestone payments or material data use payments in accordance with applicable provisions; or fail to pay the minimum annual payments under any of our in-licenses relating to our products or product candidates, our licensors may terminate the applicable license or seek other available remedies. As a result, our development of the respective product candidate or commercialization of the product would cease.

Royalties and milestone payments from Shionogi under our license agreement with Shionogi (the "Shionogi Agreement") are required to be used by Royalty Sub to service its obligations under its PhaRMA Notes, and generally will not be available to us for other purposes unless and until Royalty Sub has repaid in full its obligations under the PhaRMA Notes.

In March 2011, our wholly-owned subsidiary Royalty Sub issued $30.0 million in aggregate principal amount of PhaRMA Notes. The PhaRMA Notes are secured principally by (i) certain royalty and milestone payments under the Shionogi Agreement, pursuant to which Shionogi licensed from us the rights to market peramivir in Japan and Taiwan, (ii) rights to certain payments under a Japanese yen/U.S. dollar Currency Hedge Agreement put into place by us in connection with the issuance of the PhaRMA Notes and (iii) the pledge by us of our equity interest in Royalty Sub. Payments from Shionogi to us on non-governmental sales under the Shionogi Agreement will generally not be available to us for other purposes unless and until Royalty Sub has repaid in full its obligations under the PhaRMA Notes. Accordingly, these funds have been and will continue to be required to be dedicated to Royalty Sub's debt service and not available to us for product development or other purposes. Since September 1, 2014, payments from Shionogi have been insufficient for Royalty Sub to service its obligations under the PhaRMA Notes, resulting in a continuing event of default with respect to the PhaRMA Notes since that time. As a result of the continuing event of default, the holders of the PhaRMA Notes may be able to pursue acceleration of the PhaRMA Notes and foreclose on the collateral securing the PhaRMA Notes and our equity interest in Royalty Sub and may exercise other remedies available to them under the indenture or other documents related to the PhaRMA Notes. In such event, we may not realize the benefit of future royalty payments that might otherwise accrue to us following repayment of the PhaRMA Notes, we may incur legal costs and we might otherwise be adversely affected.

The PhaRMA Notes have a final legal maturity date of December 1, 2020, at which time the outstanding principal amount of the PhaRMA Notes, together with accrued and unpaid interest, will be due in full. The failure by Royalty Sub to repay in full the outstanding principal amount of the PhaRMA Notes, together with any accrued and unpaid interest, at the December 1, 2020 final maturity date would constitute an additional event of default under the PhaRMA Notes. We do not currently expect that Royalty Sub will be able to repay the PhaRMA Notes at final maturity. We cannot predict whether holders of PhaRMA Notes will seek to pursue any remedies as a result of the continuing event of default with respect to the PhaRMA Notes or at final maturity if Royalty Sub fails to pay the PhaRMA Notes in full at final maturity. The PhaRMA Notes are the obligation of Royalty Sub. As a result, we do not currently expect the continuing event of default on the PhaRMA Notes, or a failure by Royalty Sub to repay the PhaRMA Notes at final maturity, to have a significant impact on our future results of operations or cash flows. However, we cannot assure you that this will be the case or that we will not otherwise be adversely affected as a result the continuing event of default under the PhaRMA Notes or a failure by Royalty Sub to repay the PhaRMA Notes at maturity.

Because a continuing event of default exists under the PhaRMA Notes, the holders of the PhaRMA Notes may be able to pursue acceleration of the PhaRMA Notes and foreclose on the collateral securing the PhaRMA Notes and our equity interest in Royalty Sub. In addition, we do not currently expect that Royalty Sub will be able to repay the PhaRMA Notes at final maturity on December 1, 2020. As a result, we may not realize the benefit of future royalty payments that might otherwise accrue to us following repayment of the PhaRMA Notes and we could otherwise be adversely affected.

As Royalty Sub has been unable to service its obligations under the PhaRMA Notes and a continuing event of default exists under the PhaRMA Notes, the holders of the PhaRMA Notes may be able to pursue acceleration of the PhaRMA Notes and foreclose on the collateral securing the PhaRMA Notes and our equity interest in Royalty Sub and may exercise other remedies available to them under the indenture or other documents related to the PhaRMA Notes. In such event, we may not realize the benefit of future royalty payments that might otherwise accrue to us following repayment of the PhaRMA Notes, we may incur legal costs and we might otherwise be adversely affected. In addition, the PhaRMA Notes have a final legal maturity date of December 1, 2020, at which time the outstanding principal amount of the PhaRMA Notes, together with accrued and unpaid interest, will be due in full. The failure by Royalty Sub to repay in full the outstanding principal amount of the PhaRMA Notes, together with any accrued and unpaid interest, at the December 1, 2020 final maturity date would constitute an additional event of default under the PhaRMA Notes. We do not currently expect that Royalty Sub will be able to repay the PhaRMA Notes at final maturity. We cannot predict whether holders of PhaRMA Notes will seek to pursue any remedies as a result of the continuing event of default with respect to the PhaRMA Notes or at final maturity if Royalty Sub fails to pay the PhaRMA Notes in full at final maturity. The PhaRMA Notes are the obligation of Royalty Sub. As a result, we do not currently expect the continuing event of default on the PhaRMA Notes, or a failure by Royalty Sub to repay the PhaRMA Notes at final maturity, to have a significant impact on our future results of operations or cash flows. However, we cannot assure you that this will be the case or that we will not otherwise be adversely affected as a result the continuing event of default under the PhaRMA Notes or a failure by Royalty Sub to repay the PhaRMA Notes at maturity.

We may be required to pay premiums under the Currency Hedge Agreement entered into by us in connection with the issuance of the PhaRMA Notes. In addition, because our potential obligations under the foreign currency hedge are marked to market, we may experience additional quarterly volatility in our operating results and cash flows attributable to the Currency Hedge Agreement.

In connection with the issuance by Royalty Sub of the PhaRMA Notes, we entered into a Currency Hedge Agreement to hedge certain risks associated with changes in the value of the Japanese yen relative to the U.S. dollar. Under the foreign currency hedge agreement, we may be required to pay an annual premium in the amount of $2.0 million in May 2020. Such payment will be required if, on May 18, 2020, the spot rate of exchange for Japanese yen-U.S. dollars (determined in accordance with the Currency Hedge Agreement) is such that the U.S. dollar is worth 100 yen or less. We are required to mark to market our potential obligations under the currency hedge and post cash collateral, which may cause us to experience additional quarterly volatility in our operating results and cash flows as a result. Additionally, we may be required to pay significant premiums or a termination fee under the foreign currency hedge agreement entered into by us in connection with the issuance of the PhaRMA Notes. We are required to maintain a foreign currency hedge at 100 yen per dollar under the agreements governing the PhaRMA Notes.

Our Second Amended and Restated Senior Credit Facility contains restrictions that limit our flexibility in operating our business. We may be required to make a prepayment or repay the outstanding indebtedness earlier than we expect if a prepayment event or an event of default occurs, including a material adverse change with respect to us, which could have a material adverse effect on our business.

The Second Amended and Restated Senior Credit Facility contains various covenants that limit our ability to engage in specified types of transactions. These covenants limit our ability to, among other things:

- convey, sell, lease, license, transfer or otherwise dispose of certain parts of our business or property;
- change the nature of our business;
- liquidate or dissolve;
- enter into certain change in control or acquisition transactions;
- incur or assume certain debt, including accessing additional tranches of debt under the Senior Credit Facility;
- grant certain types of liens on our assets;
- modify, liquidate or transfer assets in certain collateral accounts;
- pay dividends or make certain distributions to our stockholders;
- make certain investments;
- enter into material transactions with affiliates; and
- modify existing debt or collaboration arrangements.

The restrictive covenants contained in the Second Amended and Restated Senior Credit Facility could cause us to be unable to pursue business opportunities that we or our stockholders may consider beneficial without the lender’s permission or without repaying all Second Amended and Restated Senior Credit Facility obligations.

A breach of any of these covenants could result in an event of default under the Second Amended and Restated Senior Credit Facility. An event of default will also occur if, among other things, a material adverse change in our business, operations or condition occurs, which could potentially include negative results in clinical trials, or a material impairment of the prospect of our repayment of any portion of the amounts we owe under the Second Amended and Restated Senior Credit Facility occurs. In the case of a continuing event of default under the agreement, the lender could elect to declare all amounts outstanding to be immediately due and payable, proceed against the collateral in which we granted to the lender a security interest under the Second Amended and Restated Senior Credit Facility, or otherwise exercise the rights of a secured creditor. Amounts outstanding under the Second Amended and Restated Senior Credit Facility are secured by substantially all of our assets and those of our subsidiaries, excluding certain specified assets but including proceeds from those assets.

Our actual or perceived failure to comply with European governmental regulations and other legal obligations related to privacy, data protection and information security could harm our business.

EU member states, Switzerland and other countries have adopted data protection laws and regulations, which impose significant compliance obligations. For example, the General Data Protection Regulation ("GDPR") imposes strict requirements on controllers and processors of personal data, including special protections for "special category data," which includes health, biometric and genetic information of data subjects located in the EU. Further, GDPR provides a broad right for EU member states to create supplemental national laws, for example relating to the processing of health, genetic and biometric data, which could further limit our ability to use and share such data or could cause our costs to increase and harm our business and financial condition. GDPR grants individuals the opportunity to object to the processing of their personal information, allows them to request deletion of personal information in certain circumstances, and provides the individual with an express right to seek legal remedies in the event the individual believes his or her rights have been violated. Further, the GDPR imposes strict rules on the transfer of personal data out of the EU to the United States or other regions that have not been deemed to offer "adequate" privacy protections.

Failure to comply with the requirements of the GDPR and the related national data protection laws of the EU member states, which may deviate slightly from the GDPR, may result in significant fines of up to 4% of global revenues, or €20.0 million, whichever is greater, and in addition to such fines, our failure to comply with the requirements of GDPR may subject us to litigation and/or adverse publicity, which could have material adverse effect on our reputation and business. As a result of the implementation of the GDPR, we are required to put in place additional mechanisms to ensure compliance with the new data protection rules. For example, the GDPR requires us to make more detailed disclosures to data subjects, requires disclosure of the legal basis on which we can process personal data, makes it harder for us to obtain valid consent for processing, will require the appointment of a data protection officer where sensitive personal data (i.e., health data) is processed on a large scale, introduces mandatory data breach notification throughout the EU, imposes additional obligations on us when we are contracting with service providers and requires us to adopt appropriate privacy governance including policies, procedures, training and data audit.

We are subject to the supervision of local data protection authorities in those jurisdictions where we undertake clinical trials. We depend on a number of third parties in relation to the provision of our services, a number of which process personal data of EU individuals on our behalf. With each such provider we are required to enter into contractual arrangements under which they are contractually obligated to only process personal data according to our instructions, and conduct diligence to ensure that they have sufficient technical and organizational security measures in place.

We are also subject to evolving European privacy laws on electronic marketing and cookies. The EU is in the process of replacing the e-Privacy Directive (2002/58/EC) with a new set of rules taking the form of a regulation that will be directly implemented in the laws of each European member state. While this e-Privacy Regulation was originally intended to be adopted on May 25, 2018, it is still going through the European legislative process and the timing of its adoption remains unclear.

The United Kingdom's decision to withdraw from the EU could result in increased regulatory and legal complexity, which may make it more difficult for us to do business in Europe and impose additional challenges in securing regulatory approval of our product candidates in Europe.

The United Kingdom's exit from the EU, or Brexit, has caused political and economic uncertainty, including in the regulatory framework applicable to our operations and product candidates, and this uncertainty may persist for years. Brexit could, among other outcomes, disrupt the free movement of goods, services and people between the United Kingdom and the EU, and result in increased legal and regulatory complexities, as well as potential higher costs of conducting business in Europe. For instance, preparations for Brexit have resulted in the decision to move the EMA from the United Kingdom to the Netherlands. This transition may cause disruption or delays in granting clinical trial authorization or opinions for marketing authorization, disruption of importation and export of active substance and other components of new drug formulations, and disruption of the supply chain for clinical trial product and final authorized formulations.

The cumulative effects of the disruption to the regulatory framework may add considerably to the development lead time to marketing authorization and commercialization of products in the EU and/or the United Kingdom. It is possible that there will be increased regulatory complexities, which can disrupt the timing of our clinical trials and regulatory approvals. In addition, changes in, and legal uncertainty with regard to, national and international laws and regulations may present difficulties for our clinical and regulatory strategy. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, would prevent us from commercializing our product candidates in the United Kingdom and/or the EU and restrict our ability to generate revenues and achieve and sustain profitability.

In addition, as a result of Brexit, other European countries may seek to conduct referenda with respect to their continuing membership with the EU. Given these possibilities and others we may not anticipate, as well as the absence of comparable precedent, it is unclear what financial, regulatory and legal implications the withdrawal of the United Kingdom from the EU would have and how such withdrawal would affect us, and the full extent to which our business could be adversely affected.

Natural disasters, epidemic or pandemic disease outbreaks, trade wars, political unrest or other events could disrupt our business or operations or those of our development partners, manufacturers, regulators or other third parties with whom we conduct business now or in the future.

A wide variety of events beyond our control, including natural disasters, epidemic or pandemic disease outbreaks (such as the recent COVID-19 outbreak), trade wars, political unrest or other events could disrupt our business or operations or those of our development partners (such as Torii), manufacturers, regulatory authorities, or other third parties with whom we conduct business. These events may cause businesses and government agencies to be shut down, supply chains to be interrupted, slowed, or rendered inoperable, and individuals to become ill, quarantined, or otherwise unable to work and/or travel due to health reasons or governmental restrictions. If our operations or those of third parties with whom we have business are impaired or curtailed as a result of these events, the development and commercialization of our products and product candidates could be impaired or halted, which could have a material adverse impact on our business. See "Risk Factors—Our business, operations, clinical development or commercialization plans and timelines, and access to capital could be adversely affected by the effects of the recent COVID-19 pandemic on us or on third parties with whom we conduct business, including without limitation our development partners, manufacturers, CROs, and others, as well as on the regulatory and government agencies with whom we work.".

We are subject to legal proceedings, which could result in losses or unexpected expenditure of time and resources.

From time to time, we may be involved in disputes, called upon to initiate legal proceedings or to defend ourselves in such legal proceedings relating to our business. Due to the inherent uncertainties in legal proceedings, we cannot accurately predict the ultimate outcome of any such proceedings. An unfavorable outcome in any such proceedings could have an adverse impact on our business, financial condition and results of operations. If our stock price is volatile, we may become involved in securities class action lawsuits in the future. Any current or future dispute resolution or legal proceeding, regardless of the merits of any such proceeding, could result in substantial costs and a diversion of management's attention and resources that are needed to successfully run our business.

Insurance coverage is increasingly more costly and difficult to obtain or maintain.

While we currently have insurance for our business, property, directors and officers, and our products, insurance is increasingly more costly and narrower in scope, and we may be required to assume more risk in the future. If we are subject to claims or suffer a loss or damage in excess of our insurance coverage, we will be required to bear any loss in excess of our insurance limits. If we are subject to claims or suffer a loss or damage that is outside of our insurance coverage, we may incur significant uninsured costs associated with loss or damage that could have an adverse effect on our operations and financial position. Furthermore, any claims made on our insurance policies may impact our ability to obtain or maintain insurance coverage at reasonable costs or at all.

If our facility incurs damage or power is lost for a significant length of time, our business will suffer.

We store clinical and stability samples at our facility that could be damaged if our facility incurs physical damage or in the event of an extended power failure. We have backup power systems in addition to backup generators to maintain power to all critical functions, but any loss of these samples could result in significant delays in our drug development process.

In addition, we store most of our preclinical and clinical data at our facilities. Duplicate copies of most critical data are secured off-site. Any significant degradation or failure of our computer systems could cause us to inaccurately calculate or lose our data. Loss of data could result in significant delays in our drug development process and any system failure could harm our business and operations.

A significant disruption in our information technology systems or a cyber-security breach could adversely affect our business.

We are increasingly dependent on information technology systems to operate our business. In addition, the FDA and comparable foreign regulatory authorities regulate, among other things, the record keeping and storage of data pertaining to potential pharmaceutical products. We currently store most of our preclinical research data, our clinical data and our manufacturing data at our facility. While we do store duplicate copies of most of our clinical data offsite and a significant portion of our data is included in regular backups of our systems, we could lose important data if our facility incurs damage, or if our vendor data systems fail, suffer damage or are destroyed.

Like other companies in our industry, our networks and infrastructure may be vulnerable to cyber-attacks or intrusions, including by computer hackers, foreign governments, foreign companies or competitors, or may be breached by employee error, malfeasance or other disruption. A breakdown, invasion, corruption, destruction or interruption of critical information technology systems could negatively impact operations. If our systems are damaged, fail to function properly or otherwise become unavailable, we may incur substantial costs to repair or replace them, and we may experience loss of critical data and interruptions or delays in our ability to perform critical functions, which could adversely affect our business, financial condition or results of operations. Any compromise of our data security could also result in a violation of applicable privacy and other laws, significant legal and financial exposure, damage to our reputation, loss or misuse of the information and a loss of confidence in our data security measures, which could harm our business. There can be no assurance that our efforts to protect our data and information technology systems will prevent breakdowns or breaches in our systems, or those of third parties with which we do business, and any such events could adversely affect our business.

If we fail to retain our existing key personnel or fail to attract and retain additional key personnel, the development of our product candidates and commercialization of our products and the related expansion of our business will be delayed or stopped.

We are highly dependent upon our senior management and scientific team, the unexpected loss of whose services might impede the achievement of our development and commercial objectives. This risk has been heightened in the current environment as a result of the ongoing COVID-19 pandemic. Competition for key personnel with the experience that we require is intense and is expected to continue to increase. Our inability to attract and retain the required number of skilled and experienced management, commercial, operational and scientific personnel will harm our business because we rely upon these personnel for many critical functions of our business.

If because of our use of hazardous materials, we violate any environmental controls or regulations that apply to such materials, we may incur substantial costs and expenses in our remediation efforts.

Our research and development involves the controlled use of hazardous materials, chemicals and various radioactive compounds. We are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and some waste products. Accidental contamination or injury from these materials could occur. In the event of an accident, we could be liable for any damages that result and any liabilities could exceed our resources. Compliance with environmental laws and regulations or a violation of such environmental laws and regulations could require us to incur substantial unexpected costs, which would materially and adversely affect our results of operations.

Risks relating to investing in our common stock

Our existing principal stockholders hold a substantial amount of our common stock and may be able to influence significant corporate decisions, which may conflict with the interest of other stockholders.

Several of our stockholders own greater than 5% of our outstanding common stock. Our top ten stockholders own more than 50% of BioCryst and can individually, and as a group, influence our operations based upon their concentrated ownership. These stockholders, if they act together, may be able to influence the outcome of matters requiring approval of the stockholders, including the election of our directors and other corporate actions.

Our stock price has been, and is likely to continue to be, highly volatile, which could cause the value of an investment in our common stock to decline significantly.

The market prices for securities of biotechnology companies in general have been highly volatile and may continue to be highly volatile in the future. Moreover, our stock price has fluctuated frequently, and these fluctuations are often not related to our financial results. For the twelve months ended March 31, 2020, the 52-week range of the market price of our stock was from $1.38 to $9.26 per share. The following factors, in addition to other risk factors described in this section, may have a significant impact on the market price of our common stock:

- announcements of technological innovations or new products by us or our competitors;
- developments or disputes concerning patents or proprietary rights;
- additional dilution through sales of our common stock or other derivative securities;
- status of new or existing licensing or collaborative agreements and government contracts;
- announcements relating to the status of our programs;
- developments and announcements regarding new and virulent strains of influenza;
- we or our partners achieving or failing to achieve development milestones;

- publicity regarding actual or potential medical results relating to products under development by us or our competitors;
- publicity regarding certain public health concerns for which we are or may be developing treatments;
- regulatory developments in both the United States and foreign countries;
- public concern as to the safety of pharmaceutical products;
- actual or anticipated fluctuations in our operating results;
- changes in financial estimates or recommendations by securities analysts;
- changes in the structure of healthcare payment systems, including developments in price control legislation;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- additions or departures of key personnel or members of our board of directors;
- purchases or sales of substantial amounts of our stock by existing stockholders, including officers or directors;
- economic and other external factors or other disasters or crises; and
- period-to-period fluctuations in our financial results.

Future sales and issuances of securities may dilute the ownership interests of our current stockholders and cause our stock price to decline.

Future sales of our common stock by current stockholders into the public market could cause the market price of our stock to fall. As of April 30, 2020, there were 154,253,225 shares of our common stock outstanding. We may from time to time issue securities in relation to a license arrangement, collaboration, merger or acquisition. We may also sell, for our own account, shares of common stock or other equity securities, from time to time at prices and on terms to be determined at the time of sale.

As of April 30, 2020, there were 19,224,679 stock options outstanding and 2,719,934 shares available for issuance under our Amended and Restated Stock Incentive Plan, 2,493,168 stock options outstanding and 706,832 shares available for issuance under our Inducement Equity Incentive Plan and 9,484 shares available for issuance under our Employee Stock Purchase Plan. In addition, we could also make equity grants outside of our Stock Incentive Plan or Inducement Equity Incentive Plan. The shares underlying existing stock options, restricted stock units and possible future stock options, stock appreciation rights and stock awards have been registered pursuant to registration statements on Form S-8.

If some or all of such shares are sold or otherwise issued into the public market over a short period of time, our current stockholders' ownership interests may be diluted and the value of all publicly traded shares is likely to decline, as the market may not be able to absorb those shares at then-current market prices. Additionally, such sales and issuances may make it more difficult for us to sell equity securities or equity-related securities in the future at a time and price that our management deems acceptable, or at all.

In March 2017, we entered into a Registration Rights Agreement with entities affiliated with Baker Bros. Advisors LP (the "Baker Entities") to provide that, if requested, we will register the shares of our common stock beneficially owned by the Baker Entities for resale under the Securities Act. Our registration obligations pursuant to the Registration Rights Agreement cover all shares then held or thereafter acquired by the Baker Entities, for up to ten years, and include our obligation to facilitate certain underwritten public offerings of our common stock by the Baker Entities in the future. On May 10, 2017, we filed a registration statement on Form S-3 with respect to 11,710,951 shares of common stock held by the Baker Entities. Subsequently, on November 21, 2019, certain of the Baker Entities acquired pre-funded warrants to purchase 11,764,706 shares of our common stock at a price of $1.69 per warrant. Each warrant has an exercise price of $0.01 per share. If the Baker Entities, by exercising their underwriting rights or otherwise, sell a large number of our shares, or the market perceives that the Baker Entities intend to sell a large number of our shares, this could adversely affect the market price of our common stock.

We have anti-takeover provisions in our corporate charter documents that may result in outcomes with which you do not agree.

Our board of directors has the authority to issue up to 4,800,000 shares of undesignated preferred stock and to determine the rights, preferences, privileges and restrictions of those shares without further vote or action by our stockholders. The rights of the holders of any preferred stock that may be issued in the future may adversely affect the rights of the holders of common stock. The issuance of preferred stock could make it more difficult for third parties to acquire a majority of our outstanding voting stock.

In addition, our certificate of incorporation provides for staggered terms for the members of the board of directors and supermajority approval of the removal of any member of the board of directors and prevents our stockholders from acting by written consent. Our certificate also requires supermajority approval of any amendment of these provisions. These provisions and other provisions of our by-laws and of Delaware law applicable to us could delay or make more difficult a merger, tender offer or proxy contest involving us.

We have never paid dividends on our common stock and do not anticipate doing so in the foreseeable future.

We have never paid cash dividends on our stock. We currently intend to retain all future earnings, if any, for use in the operation of our business. Accordingly, we do not anticipate paying cash dividends on our common stock in the foreseeable future.

Our Amended and Restated Bylaws provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for certain litigation that may be initiated by our stockholders, which may limit a stockholder's ability to obtain a favorable judicial forum for such disputes with us or our directors, officers or employees.

Our Amended and Restated Bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, stockholders, employees or agents to us or our stockholders, (iii) any action asserting a claim against us or any of our directors, officers, stockholders, employees or agents arising out of or relating to any provision of the General Corporation Law of Delaware or our Certificate of Incorporation or Amended and Restated Bylaws or (iv) any action against us or any of our directors, officers, stockholders, employees or agents governed by the internal affairs doctrine of the State of Delaware. This exclusive forum provision does not apply to establish the Delaware Court of Chancery as the forum for actions or proceedings brought to enforce a duty or liability created by the Securities Act or the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction.

This exclusive forum provision may limit a stockholder's ability to choose its preferred judicial forum for disputes with us or our directors, officers, employees or agents, which may discourage the filing of lawsuits with respect to such claims. If a court were to find this exclusive forum provision to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in another jurisdiction, which could adversely affect our business and financial condition.

Item 6. Exhibits

Number	Description
3.1	Third Restated Certificate of Incorporation of Registrant. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed December 22, 2006.
3.2	Certificate of Amendment to the Third Restated Certificate of Incorporation of Registrant. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed July 24, 2007.
3.3	Certificate of Increase of Authorized Number of Shares of Series B Junior Participating Preferred Stock. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed November 4, 2008.
3.4	Certificate of Amendment to the Third Restated Certificate of Incorporation of Registrant. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed May 7, 2014.
3.5	Certificate of Increase of Authorized Number of Shares of Series B Junior Participating Preferred Stock. Incorporated by reference to Exhibit 3.2 to the Company's Form 8-K filed May 7, 2014.
3.6	Amended and Restated Bylaws of Registrant effective October 29, 2008. Incorporated by reference to Exhibit 3.2 to the Company's Form 8-K filed November 4, 2008.
3.7	Amendment to Amended and Restated By-Laws of BioCryst Pharmaceuticals, Inc., dated January 21, 2018. Incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed January 22, 2018.
(10.1)	Employment Letter Agreement between BioCryst Pharmaceuticals, Inc. and Anthony Doyle, dated March 29, 2020.
(10.2)	BioCryst Pharmaceuticals, Inc. Inducement Equity Incentive Plan (as amended and restated February 7, 2020).
(31.1)	Certification of the Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
(31.2)	Certification of the Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
(32.1)	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
(32.2)	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
(101)	Financial statements from the Quarterly Report on Form 10-Q of BioCryst Pharmaceuticals, Inc. for the three months ended March 31, 2020, formatted in XBRL: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Comprehensive Loss, (iii) Consolidated Statements of Cash Flows, and (iv) Notes to Consolidated Financial Statements.
( )	Filed or furnished herewith.

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 on this 8th day of May, 2020.

BIOCRYST PHARMACEUTICALS, INC.

/s/ Jon P. Stonehouse

Jon P. Stonehouse
President and Chief Executive Officer
(Principal Executive Officer)

/s/ Anthony Doyle

Anthony Doyle
Senior Vice President, Chief Financial Officer
(Principal Financial Officer)

/s/ Michael L. Jones

Michael L. Jones
Executive Director, Finance and Principal Accounting Officer
(Principal Accounting Officer)

March 29, 2020

Anthony Doyle
317 Cyprus Falls Drive
Cary, NC 27513

Dear Mr. Doyle:

On behalf of BioCryst Pharmaceuticals, Inc., a Delaware corporation (the "Company"), we are pleased to offer you the position of Senior Vice President & Chief Financial Officer. You will report directly to me, as President and Chief Executive Officer. We, along with the other members of the Company's Board of Directors (the "Board"), and the Company's management team, are all very impressed with you and what you will bring to the Company. We believe that with your background, you will make significant contributions to the success of the Company.

This letter agreement (the "Agreement") will serve to confirm our agreement with respect to the terms and conditions of your employment.

1. Term of Employment.

(a) Subject to the terms and conditions of this Agreement, the Company hereby employs Anthony Doyle ("Employee") as Senior Vice President & Chief Financial Officer. Employee shall commence employment at the Company's offices in Durham, North Carolina. Employee shall devote substantially full-time attention to the business and affairs of the Company and its affiliates. Employee may (i) serve on corporate, civic, charitable or non-profit boards or committees, subject in all cases to the prior approval of the Board and other applicable written policies of the Company and its affiliates as in effect from time to time, and (ii) manage personal and family investments, participate in industry organizations and deliver lectures at educational institutions or events, so long as no such service or activity interferes, individually or in the aggregate, with the performance of Employee's responsibilities hereunder.

(b) The term of employment of Employee under this Agreement shall begin on April 15, 2020 (the "Effective Date") and terminate on the second anniversary of the Effective Date unless earlier terminated in accordance with the provisions of Section 4. In the event Employee is retained by the Company as Senior Vice President & Chief Financial Officer past the second anniversary of the Effective Date, the terms of Employee's employment shall continue to be governed by this Agreement unless otherwise provided by the Board.

2. Basic Full-Time Compensation and Benefits.

(a) Commencing as of the Effective Date, as basic compensation for services rendered under this Agreement, Employee shall be entitled to receive from the Company a salary of $40,000 per month ($480,000 per annum) (the "Base Salary"), payable in accordance with the Company's standard payroll practices as in effect from time to time during the term of this Agreement. The Base Salary will be reviewed annually by the Board or a committee thereof and may be raised at the discretion of the Board or such committee.

In addition to the Base Salary provided above, Employee shall be provided with a fiftythousand dollar ($50,000) bonus ("Signing Bonus") payable no later than six months after the Effective Date of this Agreement.

(b) Employee shall be eligible to earn a cash bonus, payable as soon as reasonably practicable in the calendar year following each calendar year during the term of this Agreement, based on the Company's and/or Employee's achievement of performance related goals proposed by management and approved by the Board or a committee thereof for the Company's applicable fiscal year (the "Incentive Compensation"). The Incentive Compensation actually earned, if any, shall be determined in the sole discretion of the Board or a committee thereof and shall be based on a target amount equal to forty percent (40%) of the Base Salary earned by Employee during such fiscal year (the "Target Amount"), which shall not be pro-rated for the first fiscal year of the term of this Agreement. The Board or a committee thereof may, in its discretion, approve an Incentive Compensation payment in excess of the Target Amount if the performance goals have been exceeded. Employee must be employed through April I of the next succeeding fiscal year in order to receive the Incentive Compensation payment for each fiscal year.

(c) Employee shall be entitled to receive such other benefits and perquisites provided to similarly situated executive officers of the Company, subject to modification or termination at any time, which benefits may include, without limitation, reasonable vacation (currently four (4) weeks), sick leave, medical benefits, life insurance, and participation in profit sharing or retirement plans.

3. Performance Based Equity Awards.

(a) The Company shall grant to Employee an option to purchase 600,000 shares of the Company' s common stock ("Common Stock"), with an exercise price equal to the fair market value of the Common Stock on the date of the grant (the "Initial Option"), which date shall be the last day of the month that the Employee begins employment under this Agreement. The Initial Option shall be granted under and subject to the terms of the Company's Inducement Equity Incentive Plan, effective as of February 7, 2020, or the Company's Stock Incentive Plan, effective as of April 24, 2019, as applicable, and subject to the terms of one or more award agreements between Employee and the Company, which Employee will be required to execute as a condition of the grant.

(b) The Initial Option shall vest and become exercisable, contingent on Employee's continued provision of services to the Company on each respective vesting date, over a period of four (4) years as follows: (i) with respect to 200,000 shares of Common Stock, on the first anniversary of the grant date or on the date of Employee's termination if Employee is terminated as a result of a reduction in force prior to the first anniversary of the grant date; and (ii) with respect to the remaining 400,000 shares of Common Stock, equally on each anniversary thereafter for the following three years until fully vested.

(c) During the term of this Agreement, Employee shall be eligible to receive equity-based compensation as determined in the sole discretion of the Board or a committee thereof, which may be subject to the achievement of certain performance targets set by the Board or such committee. All such equity-based awards shall be subject to the terms and conditions set forth in the Company's Stock Incentive Plan as in effect from time to time and award agreements issued thereunder.

4. Termination.

(a) If Employee's employment is terminated by the Company for Cause or by Employee other than pursuant to a Constructive Termination, or due to the expiration of the stated term of this Agreement or Employee's death or Disability, the Company shall pay Employee (i) any accrued and unpaid Base Salary, payable on the next payroll date; (ii) reimbursement for any and all monies advanced or expenses incurred in connection with Employee's employment for reasonable and necessary expenses incurred by Employee on behalf of the Company for the period ending on the termination date, which amount shall be reimbursed within thirty (30) days of the Company's receipt of proper documentation from Employee; (iii) any compensation that Employee had previously deferred (including any interest earned or credited thereon), in accordance with the terms and conditions of the applicable deferred compensation plans or arrangements then in effect, to the extent vested as of Employee's termination date, paid pursuant to the terms of such plans or arrangements; and (iv) any vested amount or benefit payable under any benefit plan or program in accordance with the terms thereof (the foregoing items in this Section 4(a), the "Accrued Obligations").

For all purposes under this Agreement, a termination for "Cause" shall mean a determination by the Board that Employee's employment be terminated for any of the following reasons: (i) failure or refusal to comply in any material respect with lawful policies, standards or regulations of Company; (ii) a violation of a federal or state law or regulation applicable to the business of the Company; (iii) conviction or plea of no contest to a felony under the laws of the United States or any State; (iv) fraud or misappropriation of property belonging to the Company or its affiliates; (v) a breach in any material respect of the terms of any confidentiality, invention assignment or proprietary information agreement with the Company or with a former employer, (vi) failure to satisfactorily perform Employee's duties after having received written notice of such failure and at least thirty (30) days to cure such failure, or (vii) misconduct or gross negligence in connection with the performance of Employee's duties.

For all purposes under this Agreement, "Disability" shall mean the inability of Employee to perform Employee's duties hereunder by reason of physical or mental incapacity for ninety (90) days, whether consecutive or not, during any consecutive twelve (12) month period.

(b) If Employee's employment is terminated by the Company without Cause, or by Employee pursuant to a Constructive Termination, then Employee will receive any Accrued Obligations and, subject to Section 4(c), Employee will receive the following: continuation of Base Salary for one (1) year following the effective termination date, payable in accordance with the regular payroll practices of the Company; (ii) payment of one times Employee's annual target Incentive Compensation in effect for the fiscal year in which Employee's termination date occurs, payable in equal installments over the regularly scheduled payroll periods of the Company for the one year following the effective date of termination; and (iii) if Employee elects to continue health insurance coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA") following termination of employment, the Company shall pay the monthly premium under COBRA on the same basis as active employees until the earlier of (x) 12 months following the effective termination date, or (y) the date upon which Employee commences employment with an entity other than the Company. Employee will notify the Company in writing within five (5) days of Employee's receipt of an offer of employment with any entity other than the Company, and will accordingly identify the date upon which Employee will commence employment in such writing (clauses (i) through (iii), "Severance").

For all purposes under this Agreement, "Change of Control" shall mean: (i) the sale, transfer, or other disposition of all or substantially all of the assets of the Company in liquidation or dissolution of the Company; (ii) the consummation of a merger or consolidation of the Company with any other corporation or other entity, other than (D a merger or consolidation (A) which results in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent fifty percent (50%) or more of the combined voting power of the surviving entity or the ultimate parent thereof outstanding immediately after such merger or consolidation and (B) immediately following which the individuals who comprise the Board immediately prior thereto constitute fifty percent (50%) or more of the board of directors of the entity surviving such merger or consolidation or, if the Company or the entity surviving such merger or consolidation is then a subsidiary, the ultimate parent thereof, or (II) a merger or consolidation effected to implement a recapitalization of the Company (or similar transaction) in which no Person is or becomes the beneficial owner (within the meaning of Rule 13d-3 of the Securities Exchange Act of 1934, as amended (the "1934 Act")), directly or indirectly, of securities of the Company (not including in the securities beneficially owned by such Person any securities acquired directly from the Company or its affiliates) representing more than fifty percent (50%) of the combined voting power of the Company's then outstanding securities; (iii) any person or related group of persons (other than the Company or a person that directly or indirectly controls, is controlled by, or is under common control with, the Company) directly or indirectly acquires beneficial ownership (within the meaning of Rule 13d-3 of the 1934 Act) of securities possessing more than fifty percent (50%) of the total combined voting of the Company's outstanding securities pursuant to a tender or exchange offer made directly to the Company's stockholders; or (iv) a change in the composition of the Board over a period of twelve (12) consecutive months such that a majority of the Board members (rounded up to the next whole number) ceases to be comprised of individuals who either (A) have been Board members continuously since the beginning of such period or (B) have been elected or nominated for election as Board members during such period by at least two-thirds of the Board members described in clause (A) who were still in office at the time such election or nomination was approved by the Board.

For all purposes under this Agreement, "Constructive Termination" shall mean a resignation of employment within 30 days of the occurrence of any of the following events which occurs within 6 months following a Change of Control: (i) a material reduction in Employee's responsibilities; (ii) a material reduction in Employee's Base Salary, unless such reduction is comparable in percentage to, and is part of, a reduction in the base salary of all executive officers of the Company; or (iii) a relocation of Employee's principal office to a location more than 50 miles from the location of Employee's principal office immediately preceding a Change of Control.

(c) The Company's obligation to provide Severance is conditioned upon Employee returning to the Company all of its property and confidential information that is in Employee's possession and Employee's execution and non-revocation of an enforceable release of claims (the "Release"). If Employee chooses not to execute the Release, revokes Employee's execution of the Release, or fails to comply with the terms of the Release, then the Company shall have no obligation to provide Severance and such Severance amount is subject to recoupment by the Company. The Release shall be provided to Employee no later than seven (7) days following Employee's separation from service and Employee must execute it within the time period specified in the Release (which shall not be longer than forty-five (45) days from the date of receipt). The Release shall not be effective until any applicable revocation period has expired.

5. Non-Competition; Proprietary Information and Inventions.

(a) Proprietary Information and Inventions Agreement; Non-Competition and Non Solicitation Agreement. As a condition precedent to the employment of Employee by the Company, Employee shall execute (i) the Company's Proprietary Information and Inventions Agreement, attached hereto as Exhibit A, and (ii) the Company's NonCompetition and Non-Solicitation Agreement, attached hereto as Exhibit B.

(b) Equitable Remedies. Employee acknowledges and recognizes that a violation of the Proprietary Information and Inventions Agreement or the Non-Competition and Non Solicitation Agreement by Employee may cause irreparable and substantial damage and harm to the Company or its affiliates, could constitute a failure of consideration, and that money damages will not provide a full remedy for the Company for such violations. Employee agrees that in the event of Employee's breach of the Proprietary Information and Inventions Agreement or the Non-Competition and Non-Solicitation Agreement, the Company will be entitled, if it so elects, to institute and prosecute proceedings at law or in equity to obtain damages with respect to such breach, to enforce the specific performance of such agreement(s) by Employee, and to enjoin Employee from engaging in any activity in violation hereof.

6. Miscellaneous.

(a) Entire Agreement. This Agreement, including the exhibits hereto, constitutes the entire agreement between the parties relating to the employment of Employee by the Company and there are no terms relating to such employment other than those contained in this Agreement. No modification or variation hereof shall be deemed valid unless in writing and signed by the parties hereto. No waiver by either party of any provision or condition of this Agreement shall be deemed a waiver of similar or dissimilar provisions or conditions at any time.

(b) Assignability. This Agreement may not be assigned without prior written consent of the parties hereto. To the extent allowable pursuant to this Agreement, this Agreement shall be binding upon and shall inure to the benefit of each of the parties hereto and their respective executors, administrators, personal representatives, heirs, successors and assigns.

(c) Notices. Any notice or other communication given or rendered hereunder by any party hereto shall be in writing and delivered personally or sent by registered or certified mail, postage prepaid, at the respective addresses of the parties hereto as set forth below.

(d) Captions. The section headings contained herein are inserted only as a matter of convenience and reference and in no way define, limit or describe the scope of this Agreement or the intent of any provision hereof.

(e) Taxes. All amounts to be paid to Employee hereunder are in the nature of compensation for Employee's employment by the Company, and shall be subject to withholding, income, occupation and payroll taxes and other charges applicable to such compensation.

(f) Section 409A. The parties intend for the payments and benefits under this Agreement to be exempt from Section 409A of the Code or, if not so exempt, to be paid or provided in a manner which complies with the requirements of such section, and intend that this Agreement shall be construed and administered in accordance with such intention. In the event the Company determines that a payment or benefit under this Agreement may not be in compliance with Section 409A of the Code, the Company shall reasonably confer with Employee in order to modify or amend this Agreement to comply with Section 409A of the Code and to do so in a manner to best preserve the economic benefit of this Agreement. Notwithstanding anything contained herein to the contrary, (i) in the event (A) any payments described in Section 4 would be "deferred compensation" subject to Section 409A of the Internal Revenue Code of 1986, as amended (the "Code"); and (B) Employee is a " specified employee" (as defined in Code Section 409A(2)(B)(i)), such payments shall, to the extent required by Code Section 409A, be delayed for the minimum period and in the minimum manner necessary to avoid the imposition of the tax required by Section 409A of the Code; (ii) each amount to be paid or benefit to be provided under this Agreement shall be construed as a separately identified payment for purposes of Section 409A of the Code; (iii) any payments that are due within the "short term deferral period" as defined in Section 409A of the Code shall not be treated as deferred compensation unless applicable law requires otherwise; and (iv) amounts reimbursable to Employee under this Agreement shall be paid to Employee on or before the last day of the year following the year in which the expense was incurred and the amount of expenses eligible for reimbursement (and in-kind benefits provided to Employee) during any one (1) year may not affect amounts reimbursable or provided in any subsequent year. Notwithstanding anything in this Agreement to the contrary, in the event any payments hereunder could occur in one of two calendar years as a result of being dependent upon the Release becoming nonrevocable, then, to the extent required to avoid the imposition of taxes or penalties under Section 409A of the Code, such payments shall commence on the first regularly scheduled payroll date of the Company, following the date the Release becomes nonrevocable, that occurs in the second of such two calendar years.

(g) Golden Parachute Provisions. If it is determined that any payment or benefit provided by the Company to or for the benefit of Employee, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, including, by example and not by way of limitation, acceleration by the Company or otherwise of the date of vesting or payment under any plan, program, arrangement or agreement of the Company would be subject to the excise tax imposed by Internal Revenue Code section 4999 or any interest or penalties with respect to such excise tax (such excise tax together with any such interest and penalties, shall be referred to as the "Excise Tax"), then the Company shall first make a calculation under which such payments or benefits provided to Employee are reduced to the extent necessary so that no portion thereof shall be subject to the Excise Tax (the "4999 Limit"). The Company shall then compare (i) Employee' s Net After-Tax Benefit (as defined below) assuming application of the 4999 Limit with (ii) Employee's Net After-Tax Benefit without application of the 4999 Limit. Employee shall be entitled to the greater of (i) or (ii). "Net After-Tax Benefit" shall mean the sum of (x) all payments that Employee receives or is entitled to receive that are contingent on a change in the ownership or effective control of the Company or in the ownership of a substantial portion of the assets of the Company within the meaning of Internal Revenue Code section 280G(b)(2), less (y) the amount of federal, state, local, employment, and Excise Tax (if any) imposed with respect to such payments. Any reduction pursuant to this Section 6(g) shall be implemented by determining the Parachute Payment Ratio (as defined below) for each "parachute payment" and then reducing the "parachute payments" in order beginning with the "parachute payment" with the highest Parachute Payment Ratio. For "parachute payments" with the same Parachute Payment Ratio, such "parachute payments" shall be reduced based on the time of payment of such "parachute payments," with amounts having later payment dates being reduced first. For "parachute payments" with the same Parachute Payment Ratio and the same time of payment, such "parachute payments" shall be reduced on a pro rata basis (but not below zero) prior to reducing "parachute payments" with a lower Parachute Payment Ratio. "Parachute Payment Ratio" shall mean a fraction the numerator of which is the value of the applicable "parachute payment" for purposes of Internal Revenue Code Section 2800 and the denominator of which is the actual present value of such payment.

(h) Governing Law. This Agreement is made and shall be governed by and construed in accordance with the laws of the State of North Carolina without respect to its conflicts of law principles.

[Signature Page Follows]

If the foregoing correctly sets forth our understanding, please signify your acceptance of such terms by executing this Agreement, thereby signifying your assent, as indicated below.

Yours very truly,
BioCryst Pharmaceuticals, Inc.

By: /s/ Jon Stonehouse
Jon Stonehouse
Chief Executive Officer

Cc: Stephanie Angelini
Senior Vice President, Human Resources

AGREED AND ACCEPTED

Sign: /s/ Anthony Doyle
Anthony Doyle

Exhibit A

(Proprietary Information and Inventions Agreement)

EMPLOYEE'S PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

I, Anthony Doyle, recognize that BioCryst Pharmaceuticals, Inc., a Delaware corporation (hereinafter the "Company"), is engaged in a continuous program of research, development, and production respecting its business, present and future, including fields generally related to its business.

I understand that:

A. As part of my employment by the Company I will faithfully and diligently serve and endeavor to further and safeguard the interests of the Company, and I recognize that I am expected to make new contributions and inventions of value to the Company;

B. My employment creates a relationship of confidence and trust between me and the Company with respect to any information:

i. applicable to the business of the Company; or

ii. applicable to the business of any client or customer of the Company,

in each case which may be made known to me by the Company or by any client or customer of Company or learned by me during the period of my employment.

C. The Company possesses and will continue to possess information that has been created, discovered or developed by, or assigned, disclosed or otherwise become known to, the Company (including without limitation information created, discovered, developed, disclosed or made known by me during the period of or arising out of my employment by the Company), which information is not generally known to the public. All of the aforementioned information is hereinafter called "Proprietary Information." By way of illustration, but not limitation, Proprietary Information includes trade secrets, processes, formulas, data and know-how, improvements, inventions, techniques, marketing plans, financial information, strategies, forecasts, and customer lists.

In consideration of my employment or continued employment, as the case may be, by the Company and the compensation received by me from the Company from time to time. I hereby agree as follows:

1. All Proprietary Information shall be the sole property of the Company, and the Company shall be the sole owner of all rights, title and interest in connection therewith. I hereby assign to the Company any and all rights I may have or acquire in such Proprietary Information. At all times, both during my employment by the Company and after its termination, I will keep in confidence and trust all Proprietary Information, and I will not use or disclose any Proprietary Information or anything relating to it without the prior written consent of the Company, except as may be necessary in the ordinary course of performing my duties as an employee of the Company. In the event I am required to disclose Proprietary Information pursuant to applicable law or court order, I shall, whenever legally permissible, promptly disclose such request to the Company, and cooperate with the Company to seek a protective order and to otherwise limit such disclosure from becoming public.

2. Notwithstanding anything set forth in this Agreement, or any other agreement that I have with the Company or its affiliates to the contrary, I shall not be prohibited from reporting possible violations of federal or state law or regulation to any governmental agency or entity, legislative body, or any self-regulatory organization, or making other disclosures that are protected under the whistleblower provisions of federal or state law or regulation, nor am I required to notify the Company regarding any such reporting, disclosure or cooperation with the government. Pursuant to 18 U.S.C. § 1833(b), I understand that I will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret of the Company or its affiliates that (i) is made (A) in confidence to a federal, state, or local government official, either directly or indirectly, or to my attorney and (B) solely for the purpose of reporting or investigating a suspected violation of law; or (ii) is made in a complaint or other document that is filed under seal in a lawsuit or other proceeding. I understand that if I file a lawsuit for retaliation by the Company for reporting a suspected violation of law, I may disclose the trade secret to my attorney and use the trade secret information in the court proceeding if I (x) file any document containing the trade secret under seal, and (y) do not disclose the trade secret, except pursuant to court order. Nothing in this Agreement, or any other agreement that I have with the Company or its affiliates, is intended to conflict with 18 U.S.C. § 1833(b) or create liability for disclosures of trade secrets that are expressly allowed by such section.

3. I agree that, during the period of my employment by the Company, I will not, without the Company's express prior written consent, engage in any employment or consulting other than for the Company. In the event of the termination of my employment by me or by the Company for any reason or at any time upon the Company's request, I will promptly deliver to the Company all documents and data of any nature pertaining to my work with the Company and I will not take with me any documents or data containing or pertaining to any Proprietary Information.

4. I will promptly and fully disclose to the Company, or any persons designated by it, all improvements, inventions, formulas, processes, techniques, know-how, and data, whether or not patentable, copyrightable, or otherwise protectible as intellectual property, made or conceived or reduced to practice by me, either alone or jointly with others, during the period of my employment by the Company which are related to or useful in the business of the Company, or result from the performance of my duties as an employee of the Company or result from use of assets or premises owned, leased, or contracted for by the Company (all said improvements, inventions, formulas, processes, techniques, know-how, and data shall be collectively hereinafter called "Inventions"). I agree to keep complete, accurate, and authentic accounts, notes, data, and records of all Inventions in the manner and form requested by the Company, which accounts, notes, data, and records shall be and remain the sole property of the Company. I agree to surrender the same promptly to the Company upon its request or, in the absence of such a request, upon the termination of my employment by the Company.

5. I agree that all Inventions are and shall be the sole property of the Company, and that the Company shall be the sole owner of all intellectual property and other rights in connection therewith, and by reason of my being employed by Company, to the extent permitted by law, all of the Inventions consisting of copyrightable subject matter is "work made for hire" as defined in the Copyright Act of 1976 (17 U.S.C. § 101). To the extent that any Invention is not a "work made for hire," I hereby assign to the Company for no additional consideration any and all rights I may have or acquire in or to such Inventions, including the right to sue, counterclaim, and recover for all past, present, and future infringement, misappropriation, or dilution thereof, and all rights corresponding thereto throughout the world. I further agree as to all such Inventions to assist the Company in every proper way (but at the Company's expense) to apply for, obtain, maintain and from time to time enforce such intellectual property rights, including patents and extensions and continuations of said patents, on said Inventions in any and all countries, and to that end I will execute all documents for use in applying for, obtaining and maintaining such intellectual property enforcing same, as the Company may desire, together with any further assignments thereof to the Company or persons designated by it. The foregoing obligation to assist the Company shall continue beyond the termination of my employment, but the Company shall compensate me at a reasonable rate after such termination for time actually spent by me at the Company's request on such assistance.

6. As a matter of record I attach hereto a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company which have been conceived, made, or reduced to practice by me, alone or jointly with others, prior to my engagement by the Company which I desire to remove from the operation of this Agreement. I covenant that such list is complete. If no such list is attached to this Agreement, I represent that I have no such inventions and improvements at the time of signing this Agreement.

7. I represent that my performance of all of the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence proprietary information of any third party acquired by me in confidence or in trust prior to my employment by the Company. I have not entered into, and I agree that I will not enter into, any agreement either written or oral, in conflict herewith.

8. I understand that, as part of the consideration of the offer of employment extended to me by the Company or of my continued employment by the Company, as the case may be, I will not bring, have not brought, with me to the Company and I will not use, have not used, in the performance of my responsibilities at the Company, materials or documents of a former employer, unless I have obtained written authorization from the former employer for their possession and use. Accordingly, this is to advise the Company that the only materials that I will bring to the Company or use in my employment are identified on the attached sheet and, as to each such item, I represent that I have obtained, prior to the effective date of my employment with the Company, written authorization for their possession and use in my employment with the Company. I also understand that, in my employment with the Company. I am not to breach any obligation of confidentiality that I have to former employers, and I agree that I shall fulfill all such obligations during my employment with the Company.

9. This Agreement shall be effective as of the first day of my employment by the Company. I understand and agree that this Agreement is not a contract of employment.

10. This Agreement shall be binding upon me, my heirs, executors, assigns, administrators, and other legal representatives and shall inure to the benefit of the Company, its successors and assigns.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Proprietary Information and Inventions Agreement to be executed by its duly authorized officer and Employee has executed the same as of the dates set forth below.

BIOCRYST PHARMACEUTICALS, INC.	EMPLOYEE
By: ________________________________	________________________________
Jon Stonehouse Chief Executive Officer	Anthony Doyle
Date:________________________________	Date:________________________________

April 15, 2019

BioCryst Pharmaceuticals, Inc.
4505 Emperor Blvd., Suite 200
Durham, NC 27703

Dear Sir or Madam:

I, Anthony Doyle, propose to bring to my BioCryst employment the following tangible materials and previously unpublished documents, which materials and documents may be used in my BioCryst employment:

___ No materials ___See below ___Additional sheets attached

The signature below by a representative of my current or former employer confirms that my continued possession and use of these materials is authorized.

AUTHORIZATION:

COMPANY: ______________________________		EMPLOYEE
______________________________		______________________________
By: ______________________________		Anthony Doyle
Its: ______________________________		

Exhibit B

(Non-Competition and Non-Solicitation Agreement)

This Non-Competition and Non-Solicitation Agreement (the "Agreement") is made and entered into this ___ day of _____, 2020 (the "Effective Date") by and between BioCryst Pharmaceuticals, Inc., (the "Company") and Anthony Doyle (the "Employee"). The Company and Employee are sometimes referred to in this Agreement individually as a "Party" and collectively as "Parties."

WHEREAS, Employee is commencing employment with the Company pursuant to an Employment Agreement entered into between Employee and the Company (the "Employment Agreement") and is simultaneously entering into an Employee's Proprietary Information and Inventions Agreement (the "PIIA") with the Company; and

WHEREAS, in consideration for Employee's promises and obligations set forth herein, the Company is offering Employee severance pay as specifically described in the Employment Agreement to which Employee was not previously entitled.

NOW THEREFORE, in consideration of the mutual promises and obligations set forth below and other good and valuable consideration, the receipt and sufficiency of which the Parties acknowledge, the Company and Employee agree as follows:

1. **<u>COMPANY BUSINESS AND PROTECTABLE INTERESTS.</u>** Employee acknowledges that: (i) by virtue of Employee's position with the Company, Employee will have access to Proprietary Information, as that term is defined in the PUA, which information has not become publicly available ("Confidential Information"); (ii) the Company together with its subsidiaries (the "Company Group") is currently engaged primarily, but not exclusively, in the business of the discovery, development and commercialization of medicines and programs for rare diseases (the "Business"); (iii) during the course of Employee's employment, the Company Group's Business may expand or change, in which case, such expansions or changes shall correspondingly expand or (if abandoned) contract the definition of "Business" and Employee's obligations under this Agreement; (iv) due to the nature of the Business, Confidential Information developed by the Company Group in :furtherance of the treatment for a particular rare disease would have commercial value to any other entity pursuing the development of medicines for the same disease regardless of the location of that entity, and the use of that information by such an entity would have a negative commercial impact on the Company Group; (v) the Company Group has clients, customers and collaborative partners throughout the United States and the world and the specific location of a competing business is not necessarily relevant to the capacity of that business to compete with the Company Group; and (vi) the provisions of this Agreement are reasonably necessary to protect the Company Group's legitimate business interests, are reasonable as to time, territory and scope of activities which are restricted, do not interfere with public policy or public interest and are described with sufficient accuracy and definiteness to enable Employee to understand the scope of the restrictions imposed upon Employee.

2. **COMPETITIVE BUSINESS ACTIVITIES.** Employee agrees that during the period of Employee's employment with the Company Group and for a period of time ending on the date occurring one year after the date Employee's employment terminates (irrespective of the circumstances of such termination), Employee will not:

a. on Employee's own or another's behalf, whether as an officer, director, manager, stockholder, partner, member, associate, owner, employee, consultant, or otherwise do any of the following or provide material assistance to any other party or entity to do so:

i. engage in the Business with respect to medicines or programs with which Employee was materially involved on behalf of the Company Group during Employee's employment or with respect to which Employee obtained Confidential Information during Employee's employment;

ii. solicit or do business which is the same, similar to or otherwise in competition with the Business, from or with persons or entities: (a) who are clients, customers or collaborative partners of the Company Group; (b) with whom or which Employee or someone for whom Employee was responsible solicited, negotiated, contracted, serviced or had material contact with on the Company Group's behalf; (c) with respect to whom or which Employee obtained Confidential Information during and as a consequence of Employee's employment by the Company Group; or (d) who were clients, customers or collaborative partners of the Company at any time during the last year of Employee's employment with the Company Group; nor shall Employee request, induce, or solicit such persons or entities to curtail or cancel their business with the Company Group;

iii. offer employment to, hire or otherwise solicit for employment any employee or other person who had been employed or retained by the Company Group during the last year of Employee's employment with the Company Group and with whom Employee had material contacts during the course of Employee's employment; nor shall Employee request, induce, or solicit any employee or independent contractor of the Company Group who had been employed or retained by the Company Group during the last year of Employee's employment with the Company Group and with whom Employee had material contacts during the course of Employee's employment to terminate his or her employment or independent contractor relationship with the Company Group; or

b. take any action, which is materially detrimental, or otherwise intended to be adverse to the Company Group's goodwill, name, business relations, prospects and operations.

c. The restrictions set forth in Section 2(a)(i) apply to the following separate and distinct geographical areas: (i) the world; (ii) North America (iii) Europe; (iv) the United States; (v) the United Kingdom; (vi) the State of North Carolina; (vii) the State of Alabama; (viii) within a 60-mile radius of any location of the Company Group in which Employee had an office or performed material services during Employee's employment with the Company Group; (ix) any city, metropolitan area, county, state or country in which Employee's substantial services were provided, or for which Employee had substantial responsibility, or in which Employee worked on Company Group projects, while employed by the Company Group; (x) any city, metropolitan area, county, state or country in which the Company Group is located or does or, during Employee's employment with the Company Group, did business.

d. The restrictions set forth in Section 2(a)(i) apply only to prohibit Employee from engaging in activities that are materially similar to the activities in which Employee engaged on behalf of the Company Group or with respect to which Employee would reasonably be expected to use Confidential Information.

c. Notwithstanding the foregoing, Employee's ownership, directly or indirectly, of not more than one percent of the issued and outstanding stock of a corporation the shares of which are regularly traded on a national securities exchange or in the over-the-counter market shall not violate Sections 2(a)-(b).

3. **REMEDIES.** Employee acknowledges that Employee's failure to abide by this Agreement would cause irreparable harm to the Company Group for which legal remedies would be inadequate. Therefore, in addition to any legal or other relief to which the Company Group may be entitled by virtue of Employee's failure to abide by these provisions; the Company Group may seek equitable relief, including, but not limited to, preliminary and permanent injunctive relief, for Employee's actual or threatened failure to abide by these provisions, and Employee will indemnify the Company Group for all expenses including attorneys' fees in seeking to enforce these provisions.

4. **TOLLING.** The period during which Employee must refrain from the activities set forth in Sections 2(a)-(b) shall be tolled during any period in which Employee fails to abide by these provisions.

5. **VIOLATION BY COMPANY.** In the event that Employee alleges and proves a violation by the Company Group of any obligation of the Company Group to Employee by agreement or operation of law, such violation shall not excuse Employee from Employee's obligations pursuant to this Agreement, but rather Employee shall be entitled to remedies available for the specific violation alleged and proven.

6. **OTHER AGREEMENTS.** Nothing in this Agreement shall terminate, revoke, or diminish Employee's obligations or the Company Group's rights and remedies under law or pursuant to the PUA, relating to trade secrets or proprietary information.

7. **ENTIRE AGREEMENT.** This Agreement and the PIIA, together constitute the exclusive and complete agreement between the Parties with respect to this subject matter and supersedes any other right of the Employee to severance under any plan, arrangement or agreement of the Company. No change or modification of this Agreement shall be valid or binding upon the Parties unless such change or modification is in writing and is signed by the Parties.

8. **WAIVER OF BREACH.** The Company's or Employee's waiver of any breach of a provision of this Agreement shall not waive any subsequent breach by the other Party.

9. **SEVERABILITY.** If a court of competent jurisdiction holds that any provision or sub-part thereof contained in this Agreement is invalid, illegal, or unenforceable, that invalidity, illegality, or unenforceability shall not affect any other provision in this Agreement. Additionally, if any of the provisions of this Agreement are held unenforceable by a court of competent jurisdiction, then the Parties desire that such provision, clause, or phrase be "blue penciled" or rewritten by the court to the extent necessary to render it enforceable.

10. **PARTIES BOUND.** The terms, provisions, covenants and agreements contained in this Agreement shall apply to, be binding upon and inure to the benefit of the Company's successors and assigns, and Employee's heirs, executors, administrators, and other legal representatives. Employee may not assign this Agreement.

11. **REMEDIES.** Employee acknowledges that Employee's breach of this Agreement would cause the Company irreparable harm for which damages would be difficult, if not impossible, to ascertain and legal remedies would be inadequate. Therefore, in addition to any legal or other relief to which the Company may be entitled by virtue of Employee's breach or threatened breach of this Agreement, the Company may seek equitable relief, including but not limited to preliminary and permanent injunctive relief and all other available remedies.

12. **GOVERNING LAW.** This Agreement and the employment relationship created by it shall be interpreted and construed in accordance with the laws of the State of North Carolina, including its statutes of limitations, without giving effect to any conflict-of-laws rule that would result in the application of the laws of a different jurisdiction. The Parties consent to exclusive jurisdiction in North Carolina for the purpose of any litigation relating to this Agreement and agree that any litigation by or involving them relating to this Agreement shall be conducted in the state courts of North Carolina or the appropriate federal district court located in North Carolina. Employee consents to the exercise of personal jurisdiction in any state or federal court located in North Carolina and waives any objection based upon personal jurisdiction or *forum non conveniens* with respect to any action commenced in such courts.

13. **COUNTERPARTS.** This Agreement may be executed in counterparts, each of which shall be an original, with the same effect as if the signatures affixed thereto were upon the same instrument.

14. **EMPLOYEE ACKNOWLEDGMENT.** Employee understands and agrees that this Agreement is not a contract of employment for any particular term.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Non-Competition and Non Solicitation Agreement to be executed by its duly authorized officer and Employee has executed the same as of the dates set forth below.

BIOCRYST PHARMACEUTICALS, INC.	EMPLOYEE
By: ________________________________	________________________________
Jon Stonehouse Chief Executive Officer	Anthony Doyle
Date:________________________________	Date:________________________________

Exhibit 10.2

BIOCRYST PHARMACEUTICALS, INC.
INDUCEMENT EQUITY INCENTIVE PLAN
(AS AMENDED AND RESTATED AS OF FEBRUARY 7, 2020)

ARTICLE ONE
GENERAL PROVISIONS

I. PURPOSES OF THE PLAN

A. This Inducement Equity Incentive Plan (as amended and restated, the "Plan") is intended to promote the interests of BioCryst Pharmaceuticals, Inc., a Delaware corporation (the "Company"), by providing a method whereby certain equity awards may be granted to prospective employees of the Company and its subsidiaries. The Plan is not subject to the approval of the Company's stockholders and may only be used for equity incentive grants that qualify as "inducement grants" under Listing Rule 5635(c)(4) of the corporate governance rules of the Nasdaq Stock Market (the "Nasdaq Inducement Exception").

B. The Plan allows for the grant of awards with respect to a total of 3,200,000 shares of the Company's common stock, par value $0.01 per share (the "Common Stock").

C. The Plan was approved and adopted by the Company's Board of Directors (the "Board") effective on February 7, 2020 in order to increase by 1,700,000 the number of shares of Common Stock available for issuance under the Plan.

II. ADMINISTRATION OF THE PLAN

A. The Plan shall be administered by the Committee who shall be the Compensation Committee of the Company's Board of Directors (the "Board") or, in the absence of a Compensation Committee, a properly constituted committee in compliance with the Nasdaq Inducement Exception (the administrator is referred to herein as the "Committee" or the "Plan Administrator"). Any power of the Committee may also be exercised by the Board, except to the extent that the grant or exercise of such authority would cause any Award or transaction to become subject to (or lose an exemption under) the short-swing profit recovery provisions of Section 16 of the Securities Exchange Act of 1934. To the extent that any permitted action taken by the Board conflicts with action taken by the Committee, the Board action shall control. The Committee may delegate any or all aspects of the day-to-day administration of the Plan to one or more officers or employees of the Company or any subsidiary or affiliate, and/or to one or more agents.

B. Subject to the express provisions of this Plan, the Committee shall be authorized and empowered to do all things that it determines to be necessary or appropriate in connection with the administration of this Plan, including, without limitation: (i) to prescribe, amend and rescind rules and regulations relating to this Plan and to define terms not otherwise defined herein; (ii) to determine which persons are grantees, to which of such grantees, if any, awards shall be granted hereunder and the timing of any such awards; (iii) to grant awards to grantees and determine the terms and conditions thereof, including the number of shares of Common Stock subject to awards and the exercise or purchase price of such shares and the circumstances under which awards become exercisable or vested or are forfeited or expire, which terms may but need not be conditioned upon the passage of time, continued employment, the satisfaction of performance criteria, the occurrence of certain events (including events which constitute a Change in Control), or other factors; (iv) to establish and verify the extent of satisfaction of any performance goals or other conditions applicable to the grant, issuance, exercisability, vesting and/or ability to retain any award; (v) to prescribe and amend the terms of the agreements or other documents evidencing awards made under this Plan (which need not be identical) and the terms of or form of any document or notice required to be delivered to the Company by grantees under this Plan; (vi) to determine the extent to which adjustments are required pursuant to Article One; (vii) to interpret and construe this Plan, any rules and regulations under this Plan and the terms and conditions of any award granted hereunder, and to make exceptions to any such provisions for the benefit of the Company; (viii) to approve corrections in the documentation or administration of any award; and (ix) to make all other determinations deemed necessary or advisable for the administration of this Plan.

C. All decisions, determinations and interpretations by the Committee regarding the Plan, any rules and regulations under the Plan and the terms and conditions of or operation of any Award granted hereunder, shall be final and binding on all grantees, beneficiaries, heirs, assigns or other persons holding or claiming rights under the Plan or any Award. The Committee shall consider such factors as it deems relevant, in its sole and absolute discretion, to making such decisions, determinations and interpretations including, without limitation, the recommendations or advice of any officer or other employee of the Company and such attorneys, consultants and accountants as it may select.

III. ELIGIBILITY

A. The persons eligible to participate in the Plan are prospective employees of the Company and its subsidiaries. For the avoidance of doubt, grants promised to such individuals prior to their commencement of employment may be granted following such commencement to the extent permitted under the Nasdaq Inducement Exception.

B. The Plan Administrator shall, within the scope of its administrative jurisdiction under the Plan, have full power and authority to determine the eligible persons to receive grants under the Plan and, subject to the Plan, the terms of those grants.

IV. STOCK SUBJECT TO THE PLAN

A. Shares of the Company's Common Stock shall be available for issuance under the Plan and shall be drawn from either the Company's authorized but unissued shares of Common Stock or from reacquired shares of Common Stock, including shares repurchased by the Company on the open market.

B. Should an outstanding option under this Plan expire or terminate for any reason prior to exercise in full, the shares subject to the portion of the option not so exercised shall be available for subsequent option grant or direct stock issuances or RSUs under the Plan. Unvested shares issued under the Plan and subsequently repurchased by the Company, at the original issue price paid per share, pursuant to the Company's repurchase rights under the Plan, or shares underlying terminated RSUs, shall be added back to the number of shares of Common Stock reserved for issuance under the Plan and shall accordingly be available for reissuance through one or more subsequent option grants or direct stock issuances or RSUs under the Plan. However, shares subject to an award under the Plan may not again be made available for issuance under the Plan if such shares are: (i) shares used to pay the exercise price of an option, (ii) shares delivered to or withheld by the Company to pay the withholding taxes related an award, or (iii) shares repurchased on the open market with the proceeds of an option exercise.

C. In the event any change is made to the Common Stock issuable under the Plan by reason of any stock split, stock dividend, recapitalization, combination of shares, exchange of shares or other change affecting the outstanding Common Stock as a class without receipt of consideration, then appropriate adjustments shall be made to (i) the maximum number and/or class of securities issuable under the Plan, (ii) the number and/or class of securities and price per share in effect under each outstanding option under the Plan, and (iii) the number and/or class of securities in effect under each outstanding direct stock issuance and RSU under the Plan. The purpose of such adjustments shall be to preclude the enlargement or dilution of rights and benefits under the Plan.

D. The fair market value per share of Common Stock on any relevant date under the Plan shall be determined in accordance with the following provisions:

(i) If the Common Stock is not at the time listed or admitted to trading on any national securities exchange but is traded in the over-the-counter market, the fair market value shall be the mean between the highest bid and lowest asked prices (or, if such information is available, the closing selling price) per share of Common Stock on the date in question in the over-the-counter market, as such prices are reported by the National Association of Securities Dealers through the Nasdaq National Market, the Nasdaq Global Select Market or any successor system. If there are no reported bid and asked prices (or closing selling price) for the Common Stock on the date in question, then the mean between the highest bid price and lowest asked price (or the closing selling price) on the last preceding date for which such quotations exist shall be determinative of fair market value.

(ii) If the Common Stock is at the time listed or admitted to trading on any national securities exchange, then the fair market value shall be the closing selling price per share of Common Stock on the date in question on the securities exchange determined by the Plan Administrator to be the primary market for the Common Stock, as such price is officially quoted in the composite tape of transactions on such exchange. If there is no reported sale of Common Stock on the exchange on the date in question, then the fair market value shall be the closing selling price on the exchange on the last preceding date for which such quotation exists.

(iii) If the Common Stock is at the time neither listed nor admitted to trading on any securities exchange nor traded in the over-the-counter market, then the fair market value shall be determined by the Plan Administrator after taking into account such factors as the Plan Administrator shall deem appropriate.

V. MINIMUM VESTING PERIOD

Notwithstanding any other provision of this Plan to the contrary, in no event shall any award granted pursuant to this Plan vest prior to the twelve (12)-month anniversary of the date of grant, other than in connection with the grantee’s death or permanent disability or, to the extent permitted hereunder, in connection with a Change in Control (provided that this limitation shall not apply with respect to up to five percent (5%) of the shares of Common Stock available for issuance under this Plan). The minimum vesting period set forth in this Section VI may not be waived or superseded by any provision in an award or other agreement.

VI. MINIMUM HOLDING PERIOD

All shares of Common Stock issued under this Plan shall be subject to a minimum holding period of twelve (12) months (or, if later, when the requirements under the Company’s share ownership guidelines are satisfied), provided that nothing in this Section shall prohibit the disposition of Common Stock in connection with a Change in Control.

ARTICLE TWO
DISCRETIONARY OPTION GRANT PROGRAM

I. TERMS AND CONDITIONS OF OPTIONS

Options granted pursuant to this Article Two shall be authorized by action of the Plan Administrator and shall be non-statutory options. Each option granted shall be evidenced by one or more instruments in the form approved by the Plan Administrator. Each such instrument shall, however, comply with the terms and conditions specified below.

A. **Option Price.**

1. The option price per share shall be fixed by the Plan Administrator. In no event, however, shall the option price per share be less than one hundred percent (100%) of the fair market value per share of Common Stock on the date of the option grant.

2. The option price shall become immediately due upon exercise of the option and shall, subject to the provisions of Section II of this Article Two and the instrument evidencing the grant, be payable through one of the following methods (or a combination thereof):

(i) full payment in cash or check drawn to the Company’s order;

(ii) full payment in shares of Common Stock held by the optionee for the requisite period necessary to avoid a charge to the Company’s earnings for financial reporting purposes and valued at fair market value on the Exercise Date (as such term is defined below);

(iii) full payment through a combination of shares of Common Stock held by the optionee for the requisite period necessary to avoid a charge to the Company's earnings for financial reporting purposes and valued at fair market value on the Exercise Date and cash or cash equivalent;

(iv) full payment through a "net settlement" procedure pursuant to which the Company shall withhold shares of Common Stock issuable in connection with the exercise of the option with a fair market value equal to the exercise price and, if elected by the optionee, all applicable Federal and State income and employment taxes required to be withheld by the Company in connection with such exercise;

(v) full payment through a broker-dealer sale and remittance procedure pursuant to which the optionee (I) shall provide irrevocable written instructions to a designated brokerage firm to effect the immediate sale of the purchased shares and remit to the Company, out of the sale proceeds available on the settlement date, sufficient funds to cover the aggregate option price payable for the purchased shares plus all applicable Federal and State income and employment taxes required to be withheld by the Company in connection with such purchase and (II) shall provide written directives to the Company to deliver the certificates for the purchased shares directly to such brokerage firm in order to complete the sale transaction; or

(vi) such other method as permitted by the Plan Administrator.

For purposes of this subparagraph 2, the Exercise Date shall be the date on which written notice of the option exercise is delivered to the Company. Except to the extent the sale and remittance procedure is utilized in connection with the exercise of the option, payment of the option price for the purchased shares must accompany such notice.

B. **Term and Exercise of Options.**

Each option granted under this Article Two shall be exercisable at such time or times, during such period, and for such number of shares as shall be determined by the Plan Administrator and set forth in the instrument evidencing the option grant. No such option, however, shall have a maximum term in excess of ten (10) years from the grant date. During the lifetime of the optionee, the option shall be exercisable only by the optionee and shall not be assignable or transferable by the optionee except for a transfer of the option by will or by the laws of descent and distribution following the optionee's death. However, the Plan Administrator shall have the discretion to provide that an option may, in connection with the optionee's estate plan, be assigned in whole or in part during the optionee's lifetime either as (i) as a gift to one or more members of optionee's immediate family, to a trust in which optionee and/or one or more such family members hold more than fifty percent (50%) of the beneficial interest or an entity in which more than fifty percent (50%) of the voting interests are owned by optionee and/or one or more such family members, or (ii) pursuant to a domestic relations order. The assigned portion shall be exercisable only by the person or persons who acquire a proprietary interest in the option pursuant to such assignment. The terms applicable to the assigned portion shall be the same as those in effect for this option immediately prior to such assignment and shall be set forth in such documents issued to the assignee as the Plan Administrator may deem appropriate.

C. **Termination of Service**.

1. Except to the extent otherwise provided pursuant to an applicable award agreement, the following provisions shall govern the exercise period applicable to any options held by the optionee at the time of cessation of Service or death.

(i) Should the optionee cease to remain in Service for any reason other than death or permanent disability, then the period for which each outstanding option held by such optionee is to remain exercisable shall be limited to the three (3)-month period following the date of such cessation of Service. However, should optionee die during the three (3)-month period following his or her cessation of Service, the personal representative of the optionee's estate or the person or persons to whom the option is transferred pursuant to the optionee's will or in accordance with the laws of descent and distribution shall have a twelve (12)-month period following the date of the optionee's death during which to exercise such option.

(ii) In the event such Service terminates by reason of permanent disability (as defined in Section 22(e)(3) of the Internal Revenue Code), then the period for which each outstanding option held by the optionee is to remain exercisable shall be limited to the twelve (12)-month period following the date of such cessation of Service.

(iii) Should the optionee, after completing five (5) full years of Service, die while in Service, then the exercisability of each of his or her outstanding options shall automatically accelerate so that each such option shall become fully exercisable with respect to the total number of shares of Common Stock at the time subject to such option and may be exercised for all or any portion of such shares. The personal representative of the optionee's estate or the person or persons to whom the option is transferred pursuant to the optionee's will or in accordance with the laws of descent and distribution shall have a twelve (12)-month period following the date of the optionee's death during which to exercise such option.

(iv) In the event such Service terminates by reason of death prior to the optionee obtaining five (5) full years of Service, then the period for which each outstanding vested option held by the optionee at the time of death shall be exercisable by the optionee's estate or the person or persons to whom the option is transferred pursuant to the optionee's will shall be limited to the twelve (12)-month period following the date of the optionee's death.

(v) Under no circumstances, however, shall any such option be exercisable after the specified expiration date of the option term.

(vi) Each such option shall, during such limited exercise period, be exercisable for any or all of the shares for which the option is exercisable on the date of the optionee's cessation of Service. Upon the expiration of such limited exercise period or (if earlier) upon the expiration of the option term, the option shall terminate and cease to be exercisable. However, each outstanding option shall immediately terminate and cease to remain outstanding, at the time of the optionee's cessation of Service, with respect to any shares for which the option is not otherwise at that time exercisable or in which the optionee is not otherwise vested.

(vii) Should (i) the optionee's Service be terminated for misconduct (including, but not limited to, any act of dishonesty, willful misconduct, fraud or embezzlement) or (ii) the optionee make any unauthorized use or disclosure of confidential information or trade secrets of the Company or its parent or subsidiary corporations, then in any such event all outstanding options held by the optionee under this Article Two shall terminate immediately and cease to be exercisable.

2. The Plan Administrator shall have complete discretion, exercisable either at the time the option is granted or at any time while the option remains outstanding, to permit one or more options held by the optionee under this Article Two to be exercised, during the limited period of exercisability provided under subparagraph 1 above, not only with respect to the number of shares for which each such option is exercisable at the time of the optionee's cessation of Service but also with respect to one or more subsequent installments of purchasable shares for which the option would otherwise have become exercisable had such cessation of Service not occurred.

3. For purposes of the foregoing provisions of this Section I.C (and for all other purposes under the Plan):

(i) The optionee shall be deemed to remain in the Service of the Company for so long as such individual renders services on a periodic basis to the Company (or any parent or subsidiary corporation) in the capacity of an Employee, a non-employee member of the board of directors or an independent consultant or advisor, unless the agreement evidencing the applicable option grant specifically states otherwise.

(ii) The optionee shall be considered to be an Employee for so long as such individual remains in the employ of the Company or one or more of its parent or subsidiary corporations, subject to the control and direction of the employer entity not only as to the work to be performed but also as to the manner and method of performance.

D. **Stockholder Rights.**

An optionee shall have no stockholder rights with respect to any shares covered by the option until such individual shall have exercised the option and paid the option price for the purchased shares. Without limitation, an optionee shall not have any right to receive dividends with respect to unexercised options.

E. **No Repricing.**

No option may be repriced, regranted through cancellation, including cancellation in exchange for cash or other awards, or otherwise amended to reduce its option price (other than with respect to adjustments made in connection with a transaction or other change in the Company's capitalization as permitted under this Plan) without the approval of the stockholders of the Company.

II. CORPORATE TRANSACTIONS/CHANGES IN CONTROL

A. In the event of any of the following stockholder-approved transactions (a “Corporate Transaction”):

(1) a merger or consolidation in which the Company is not the surviving entity, except for a transaction the principal purpose of which is to change the State of the Company’s incorporation,

(2) the sale, transfer or other disposition of all or substantially all of the assets of the Company in liquidation or dissolution of the Company, or

(3) any reverse merger in which the Company is the surviving entity but in which securities possessing more than fifty percent (50%) of the total combined voting power of the Company’s outstanding securities are transferred to a person or persons different from the persons holding those securities immediately prior to such merger.

B. Immediately after the consummation of the Corporate Transaction, all outstanding options under this Article Two shall fully vest, terminate and cease to be outstanding, except to the extent continued or assumed (as applicable) by the Company or the successor corporation or its parent company. The Plan Administrator shall have complete discretion to provide, on such terms and conditions as it sees fit, for a cash payment to be made to any optionee on account of any option terminated in accordance with this paragraph, in an amount equal to the excess (if any) of (A) the fair market value of the shares subject to the option as of the date of the Corporate Transaction, over (B) the aggregate exercise price of the option.

C. Each outstanding option under this Article Two which is assumed in connection with the Corporate Transaction or is otherwise to continue in effect shall be appropriately adjusted, immediately after such Corporate Transaction, to apply and pertain to the number and class of securities which would have been issued to the option holder, in consummation of such Corporate Transaction, had such person exercised the option immediately prior to such Corporate Transaction. Appropriate adjustments shall also be made to the option price payable per share, provided the aggregate option price payable for such securities shall remain the same. In addition, the class and number of securities available for issuance under the Plan following the consummation of the Corporate Transaction shall be appropriately adjusted. Any such options that are so continued or assumed in connection with a Corporate Transaction shall be treated as follows: if the grantee’s employment is terminated by the Company without Cause or the grantee resigns due to a Constructive Termination, in either case within the ninety (90) day period preceding or the two (2) year period following the Corporate Transaction, the exercisability of such option shall automatically accelerate, and the Company’s outstanding repurchase rights under this Article Two shall immediately terminate; provided, however, that if the Company, the acquiror or successor refuses to continue (or, as applicable, assume) the option in connection with the Corporate Transaction, the exercisability of such option under this Article Two shall automatically accelerate, and the Company’s outstanding repurchase rights under this Article Two shall immediately terminate upon the occurrence of such Corporate Transaction.

D. The grant of options under this Article Two shall in no way affect the right of the Company to adjust, reclassify, reorganize or otherwise change its capital or business structure or to merge, consolidate, dissolve, liquidate or sell or transfer all or any part of its business or assets.

E. In the event of a Change in Control, options shall be treated as follows: if the grantee's employment is terminated by the Company without Cause or the grantee resigns due to a Constructive Termination, in either case within the ninety (90) day period preceding or the two (2) year period following the Change in Control, the exercisability of such option shall automatically accelerate, and the Company's outstanding repurchase rights under this Article Two shall immediately terminate; provided, however, that if the acquiror or successor refuses to assume the option in connection with the Change in Control, the exercisability of such option under this Article Two shall automatically accelerate, and the Company's outstanding repurchase rights under this Article Two shall immediately terminate upon the occurrence of such Change in Control. In the event that the acquiror or successor refuses to assume the option in connection with the Change in Control, the Plan Administrator shall have complete discretion to provide, on such terms and conditions as it sees fit, for a cash payment to be made to any optionee on account of any option terminated in accordance with this paragraph, in an amount equal to the excess (if any) of (A) the fair market value of the shares subject to the option as of the date of the Change in Control, over (B) the aggregate exercise price of the option.

F. For purposes of this Section II (and for all other purposes under the Plan), a Change in Control shall be deemed to occur in the event:

(1) any person or related group of persons (other than the Company or a person that directly or indirectly controls, is controlled by, or is under common control with, the Company) directly or indirectly acquires beneficial ownership (within the meaning of Rule 13d-3 of the Securities Exchange Act of 1934, as amended) of securities possessing more than fifty percent (50%) of the total combined voting power of the Company's outstanding securities pursuant to a tender or exchange offer made directly to the Company's stockholders; or

(2) there is a change in the composition of the Board over a period of twenty-four (24) consecutive months or less such that a majority of the Board members (rounded up to the next whole number) ceases, by reason of one or more contested elections for Board membership, to be comprised of individuals who either (A) have been Board members continuously since the beginning of such period or (B) have been elected or nominated for election as Board members during such period by at least two-thirds of the Board members described in clause (A) who were still in office at the time such election or nomination was approved by the Board.

G. All options accelerated in connection with the Corporate Transaction or Change in Control (either at the time of the Corporate Transaction or Change in Control or as otherwise provided in this Section II) shall remain fully exercisable until the expiration or sooner termination of the option term.

H. For purposes of this Plan:

1. “Cause” means, unless otherwise provided in the applicable award agreement, the Company’s termination of the grantee’s employment for any of the following reasons: (i) failure or refusal to comply in any material respect with lawful policies, standards or regulations of Company; (ii) a violation of a federal or state law or regulation applicable to the business of the Company; (iii) conviction or plea of no contest to a felony under the laws of the United States or any State; (iv) fraud or misappropriation of property belonging to the Company or its affiliates; (v) a breach in any material respect of the terms of any confidentiality, invention assignment or proprietary information agreement with the Company or with a former employer, (vi) failure to satisfactorily perform the grantee’s duties after having received written notice of such failure and at least thirty (30) days to cure such failure, or (vii) misconduct or gross negligence in connection with the performance of the grantee’s duties.

2. “Constructive Termination” means, unless otherwise provided in the applicable award agreement, the grantee’s resignation of employment with the Company within ninety (90) days of the occurrence of any of the following: (i) a material reduction in the grantee’s responsibilities; (ii) a material reduction in the grantee’s base salary; or (iii) a relocation of the grantee’s principal office to a location more than 50 miles from the location of the grantee’s existing principal office.

III. EXTENSION OF EXERCISE PERIOD

The Plan Administrator shall have full power and authority, exercisable either at the time the option is granted or at any time while the option remains outstanding, to extend the period of time for which any option granted under this Article Two is to remain exercisable following the optionee’s cessation of Service or death from the limited period in effect under Section I.C.1 of Article Two to such greater period of time as the Plan Administrator shall deem appropriate; <u>provided</u>, however, that in no event shall such option be exercisable after the specified expiration date of the option term.

ARTICLE THREE
<u>STOCK ISSUANCE PROGRAM</u>

I. STOCK ISSUANCE TERMS

Shares of Common Stock may be issued under the Stock Issuance Program through direct and immediate issuances without any intervening option grants. Each such stock issuance shall be evidenced by a Stock Issuance Agreement which complies with the terms specified below. Shares of Common Stock may also be issued under the Stock Issuance Program pursuant to restricted stock units (“RSUs”), which are awards granted to eligible employees that entitle them to shares of Common Stock (or cash in lieu thereof) in the future following the satisfaction of vesting conditions imposed by the Plan Administrator.

A. **<u>Vesting Provisions</u>**.

1. The Plan Administrator may issue shares of Common Stock under the Stock Issuance Program which are to vest in one or more installments over the grantee's period of Service or upon attainment of specified performance objectives. Alternatively, the Plan Administrator may issue RSUs under the Stock Issuance Program which shall entitle the recipient to receive a specified number of shares of Common Stock upon the attainment of one or more Service and/or performance goals established by the Plan Administrator. Upon the attainment of such Service and/or performance goals, fully-vested shares of Common Stock shall be issued in satisfaction of those RSUs.

2. Any new, substituted or additional securities or other property (including money paid other than as a regular cash dividend) issued by reason of any stock dividend, stock split, recapitalization, combination of shares, exchange of shares or other change affecting the outstanding Common Stock as a class without the Company's receipt of consideration, shall be issued or set aside with respect to the shares of unvested Common Stock granted to a grantee or subject to a grantee's RSUs, subject to (i) the same vesting requirements applicable to the grantee's unvested shares of Common Stock or RSUs, and (ii) such escrow arrangements as the Plan Administrator shall deem appropriate.

3. The grantee shall have full stockholder rights with respect to any shares of Common Stock issued to the grantee under the Stock Issuance Program, whether or not the grantee's interest in those shares is vested, except that the grantee shall not have dividend rights with respect to such shares prior to the vesting of such shares. However, the Plan Administrator may provide for a grantee to receive one or more dividend equivalents with respect to such shares, entitling the grantee to all regular cash dividends payable on such shares of Common Stock, which amounts shall be (i) subject to the same vesting requirements applicable to the shares of Common Stock granted hereunder, and (ii) payable upon vesting of the shares to which such dividend equivalents relate.

4. The grantee shall not have any stockholder rights with respect to any shares of Common Stock subject to an RSU. However, the Plan Administrator may provide for a grantee to receive one or more dividend equivalents with respect to such shares, entitling the grantee to all regular cash dividends payable on the shares of Common Stock underlying the RSU, which amounts shall be (i) subject to the same vesting requirements applicable to the shares of Common Stock underlying the RSU, and (ii) payable upon issuance of the shares to which such dividend equivalents relate.

5. Should the grantee cease to remain in Service while holding one or more unvested shares of Common Stock issued under the Stock Issuance Program or should the performance objectives not be attained with respect to one or more such unvested shares of Common Stock, then those shares shall be immediately surrendered to the Company for cancellation, and the grantee shall have no further stockholder rights with respect to those shares. To the extent the surrendered shares were previously issued to the grantee for consideration paid in cash, the Company shall repay to the grantee the cash consideration paid for the surrendered shares.

6. Except as prohibited by the last sentence of paragraph 1 above, the Plan Administrator may in its discretion waive the surrender and cancellation of one or more unvested shares of Common Stock which would otherwise occur upon the cessation of the grantee’s Service or the non-attainment of the performance objectives applicable to those shares. Such waiver shall result in the immediate vesting of the grantee's interest in the shares of Common Stock as to which the waiver applies. Such waiver may be effected at any time, whether before or after the grantee's cessation of Service or the attainment or non-attainment of the applicable performance objectives.

7. Outstanding RSUs under the Stock Issuance Program shall automatically terminate, and no shares of Common Stock shall actually be issued in satisfaction of those awards, if the Service and/or performance goals established for such awards are not attained. The Plan Administrator, however, shall, except as prohibited by the last sentence of paragraph 1 above, have the discretionary authority to issue shares of Common Stock in satisfaction of one or more outstanding RSUs as to which the designated Service and/or performance goals are not attained. Such authority may be exercised at any time, whether before or after the grantee's cessation of Service or the attainment or non-attainment of the applicable performance objectives.

II. CORPORATE TRANSACTION/CHANGE IN CONTROL

A. Each award which is assigned in connection with (or is otherwise to continue in effect after) a Corporate Transaction shall be appropriately adjusted such that it shall apply and pertain to the number and class of securities issued to the grantee in consummation of the Corporate Transaction with respect to the shares granted to grantee under this Article Three.

B. In the event of a Change in Control, shares of restricted stock and RSUs shall be treated as follows: if the grantee’s employment is terminated by the Company without Cause or the grantee resigns due to a Constructive Termination, in either case within the ninety (90) day period preceding or the two (2) year period following the Change in Control, the vesting of such restricted stock and RSUs shall automatically accelerate (and all of the shares of Common Stock subject to such RSUs shall be issued to grantees), and the Company’s outstanding repurchase rights under this Article Three shall immediately terminate; provided, however, that if the acquiror or successor refuses to assume the shares of restricted stock or RSUs or substitute an award of equivalent value (as determined by the Committee in its discretion) in connection with the Change in Control, the vesting of such restricted stock or RSUs under this Article Three shall automatically accelerate (and all of the shares of Common Stock subject to such RSUs shall be issued to grantees). To the extent any shares of restricted stock or RSUs vest in whole or in part based on the achievement of performance criteria, the amount that shall vest in accordance with the proviso to clause (2) of the immediately-preceding sentence shall vest based on the higher of actual performance goal attainment through the date of the Change in Control or a prorated amount using target performance and based on the time elapsed in the performance period as of the date of the Change in Control.

III. STOCKHOLDER RIGHTS

A. Individuals who are granted shares of Common Stock pursuant to this Article Three shall be the owners of such shares for all purposes while holding such Common Stock, and may exercise full voting rights with respect to those shares at all times while held by the individuals. Individuals who have been granted RSUs shall have no voting rights with respect to Common Stock underlying RSUs unless and until such Common Stock is reflected as issued and outstanding shares on the Company’s stock ledger.

B. Individuals who are granted shares of Common Stock pursuant to this Article Three shall not have dividend rights with respect to such shares prior to the vesting of such shares. However, the Plan Administrator may provide for a grantee to receive one or more dividend equivalents with respect to such shares, entitling the grantee to all regular cash dividends payable on such shares of Common Stock, which amounts shall be (i) subject to the same vesting requirements applicable to the shares of Common Stock granted hereunder, and (ii) payable upon vesting of the shares to which such dividend equivalents relate.

IV. SHARE ESCROW / LEGENDS

Unvested shares may, in the Plan Administrator's discretion, be held in escrow by the Company until the grantee's interest in such shares vests or may be issued directly to the grantee with restrictive legends on the certificates evidencing those unvested shares.

ARTICLE FOUR
MISCELLANEOUS

I. AMENDMENT OF THE PLAN

The Board shall have complete and exclusive power and authority to amend or modify the Plan in any or all respects whatsoever. However, no such amendment or modification shall materially adversely affect any option previously granted under the Plan without the consent of the holder of such option.

II. TAX WITHHOLDING

A. The Company’s obligation to deliver shares upon the exercise of stock options or upon the grant or vesting of direct stock issuances or RSUs under the Plan shall be subject to the satisfaction of all applicable Federal, State, non-U.S. and local income and employment tax withholding requirements.

B. Holders of outstanding options or stock issuances and RSUs under the Plan may elect to have the Company withhold, from the shares of Common Stock otherwise issuable upon the exercise or vesting of such awards, a whole number of such shares with an aggregate fair market value equal to the minimum amount necessary to satisfy the Federal, State and local income and employment tax withholdings (the “Taxes”) incurred in connection with the acquisition or vesting of such shares. In lieu of such direct withholding, one or more grantees may also be granted the right to deliver whole shares of Common Stock to the Company in satisfaction of such Taxes. Any withheld or delivered shares shall be valued at their fair market value on the applicable determination date for such Taxes.

III. EFFECTIVE DATE AND TERM OF PLAN

The Plan shall be effective on the date specified in the Board of Directors resolution adopting the Plan.

IV. USE OF PROCEEDS

Any cash proceeds received by the Company from the sale of shares pursuant to options or stock issuances granted under the Plan shall be used for general corporate purposes.

V. REGULATORY APPROVALS

A. The implementation of the Plan, the granting of any option hereunder, and the issuance of stock (i) upon the exercise or surrender of any option or (ii) under the Stock Issuance Program shall be subject to the procurement by the Company of all approvals and permits required by regulatory authorities having jurisdiction over the Plan, the options granted under it and the stock issued pursuant to it.

B. No shares of Common Stock or other assets shall be issued or delivered under the Plan unless and until there shall have been compliance with all applicable requirements of Federal and state securities laws, including (to the extent required) the filing and effectiveness of the Form S-8 registration statement for the shares of Common Stock issuable under the Plan, and all applicable listing requirements of any stock exchange (or the Nasdaq National Market, the Nasdaq Global Select Market or any successor system, if applicable) on which Common Stock is then trading.

VI. NO EMPLOYMENT/SERVICE RIGHTS

Neither the action of the Company in establishing or restating the Plan, nor any action taken by the Plan Administrator hereunder, nor any provision of the Plan shall be construed so as to grant any individual the right to remain in the employ or service of the Company (or any parent or subsidiary corporation) for any period of specific duration, and the Company (or any parent or subsidiary corporation retaining the services of such individual) may terminate such individual's employment or service at any time and for any reason, with or without cause.

VII. MISCELLANEOUS PROVISIONS

A. Except to the extent otherwise expressly provided in the Plan, the right to acquire Common Stock or other awards under the Plan may not be assigned, encumbered or otherwise transferred by any grantee.

B. Awards issued under the Plan shall be subject to any clawback policy of the Company as in effect from time-to-time.

C. The provisions of the Plan relating to the exercise of options and the issuance and/or vesting of shares shall be governed by the laws of the State of Delaware without resort to that state's conflict-of-laws provisions, as such laws are applied to contracts entered into and performed in such State.

D. The Plan is intended to be an unfunded plan. Grantees are and shall at all times be general creditors of the Company with respect to their awards. If the Committee or the Company chooses to set aside funds in a trust or otherwise for the payment of awards under the Plan, such funds shall at all times be subject to the claims of the creditors of the Company in the event of its bankruptcy or insolvency.

E. Awards granted under the Plan to residents of countries other than the United States may be subject to terms and conditions in addition to and/or different from those specified herein, which such terms and conditions shall be set forth in an Appendix to the Plan. Any terms in such Appendix that conflict with Articles One through Four of the Plan shall apply in lieu thereof.

Exhibit 31.1

CERTIFICATIONS

I, Jon P. Stonehouse, certify that:

1. I have reviewed this quarterly report on Form 10-Q of BioCryst Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: May 8, 2020

/s/ Jon P. Stonehouse
Jon P. Stonehouse
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Anthony Doyle, certify that:

1. I have reviewed this quarterly report on Form 10-Q of BioCryst Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

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

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

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

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

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

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

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

Date: May 8, 2020

/s/ Anthony Doyle
Anthony Doyle
Senior Vice President, Chief Financial Officer

Exhibit 32.1

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

In connection with the Quarterly Report of BioCryst Pharmaceuticals, Inc. (the “Company”) on Form 10-Q for the period ending March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Jon P. Stonehouse, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

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

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

/s/ Jon P. Stonehouse

Jon P. Stonehouse
President and Chief Executive Officer
Date: May 8, 2020

Exhibit 32.2

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

In connection with the Quarterly Report of BioCryst Pharmaceuticals, Inc. (the “Company”) on Form 10-Q for the period ending March 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Anthony Doyle, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge:

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

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

/s/ Anthony Doyle
Anthony Doyle
Senior Vice President, Chief Financial Officer
Date: May 8, 2020