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

FORM 10-Q

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

FOR THE QUARTERLY PERIOD ENDED JUNE 30, 2019

or

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

FOR THE TRANSITION PERIOD FROM _ TO _

Commission file number 000-19319

Vertex Pharmaceuticals Incorporated
(Exact name of registrant as specified in its charter)

Massachusetts	**04-3039129**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
50 Northern Avenue, Boston, Massachusetts	**02210**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code **(617) 341-6100**

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, $0.01 Par Value Per Share	VRTX	The 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 ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Common Stock, par value $0.01 per share	257,035,443	Outstanding at July 26, 2019

VERTEX PHARMACEUTICALS INCORPORATED
FORM 10-Q
FOR THE QUARTER ENDED JUNE 30, 2019

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“We,” “us,” “Vertex” and the “Company” as used in this Quarterly Report on Form 10-Q refer to Vertex Pharmaceuticals Incorporated, a Massachusetts corporation, and its subsidiaries.

“Vertex,” “KALYDECO®,” “ORKAMBI®,” “SYMDEKO®” and “SYMKEVI®” are registered trademarks of Vertex. Other brands, names and trademarks contained in this Quarterly Report on Form 10-Q are the property of their respective owners.

We use the brand name for our products when we refer to the product that has been approved and with respect to the indications on the approved label. Otherwise, including in discussions of our cystic fibrosis development programs, we refer to our compounds by their scientific (or generic) name or VX developmental designation.

Part I. Financial Information

Item 1. Financial Statements

VERTEX PHARMACEUTICALS INCORPORATED
Condensed Consolidated Statements of Operations
(unaudited)
(in thousands, except per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Revenues:				
Product revenues, net	$ 940,380	$ 749,912	$ 1,797,633	$ 1,387,641
Collaborative and royalty revenues	913	2,245	2,095	5,315
Total revenues	941,293	752,157	1,799,728	1,392,956
Costs and expenses:				
Cost of sales	135,740	104,382	230,832	175,995
Research and development expenses	379,091	337,532	718,581	648,085
Sales, general and administrative expenses	156,502	137,303	303,547	267,111
Restructuring expense (income)	—	62	—	(14)
Total costs and expenses	671,333	579,279	1,252,960	1,091,177
Income from operations	269,960	172,878	546,768	301,779
Interest income	18,076	8,049	33,691	13,838
Interest expense	(14,837)	(18,155)	(29,705)	(35,041)
Other income, net	53,939	53,819	96,549	150,657
Income before provision for (benefit from) income taxes	327,138	216,591	647,303	431,233
Provision for (benefit from) income taxes	59,711	10,341	111,245	(2,318)
Net income	267,427	206,250	536,058	433,551
Loss (income) attributable to noncontrolling interest	—	1,110	—	(15,928)
Net income attributable to Vertex	$ 267,427	$ 207,360	$ 536,058	$ 417,623
Amounts per share attributable to Vertex common shareholders:				
Net income:				
Basic	$ 1.04	$ 0.82	$ 2.09	$ 1.65
Diluted	$ 1.03	$ 0.80	$ 2.06	$ 1.61
Shares used in per share calculations:				
Basic	256,154	254,135	255,941	253,685
Diluted	259,822	258,584	260,015	258,557

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

VERTEX PHARMACEUTICALS INCORPORATED
Condensed Consolidated Statements of Comprehensive Income
(unaudited)
(in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	**2018**	**2019**	**2018**
Net income	$ 267,427	$ 206,250	$ 536,058	$ 433,551
Changes in other comprehensive income (loss):				
Unrealized holding gains (losses) on marketable securities, net	451	373	1,047	(87)
Unrealized (losses) gains on foreign currency forward contracts, net of tax of $1.8 million, $0.2 million, $3.3 million and $0.5 million, respectively	(5,776)	25,895	(5,998)	25,033
Foreign currency translation adjustment	(3,876)	8,870	1,091	6,141
Total changes in other comprehensive (loss) income	(9,201)	35,138	(3,860)	31,087
Comprehensive income	258,226	241,388	532,198	464,638
Comprehensive loss (income) attributable to noncontrolling interest	—	1,110	—	(15,928)
Comprehensive income attributable to Vertex	$ 258,226	$ 242,498	$ 532,198	$ 448,710

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

VERTEX PHARMACEUTICALS INCORPORATED
Condensed Consolidated Balance Sheets
(unaudited)
(in thousands, except per share amounts)

	June 30, 2019	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 3,294,684	$ 2,650,134
Marketable securities	656,538	518,108
Accounts receivable, net	464,900	409,688
Inventories	143,017	124,360
Prepaid expenses and other current assets	151,829	140,819
Total current assets	4,710,968	3,843,109
Property and equipment, net	731,131	812,005
Goodwill	50,384	50,384
Deferred tax assets	1,425,191	1,499,672
Operating lease assets	58,031	—
Other assets	57,766	40,728
Total assets	$ 7,033,471	$ 6,245,898
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	$ 77,045	$ 110,987
Accrued expenses	1,069,072	958,899
Other current liabilities	113,103	50,406
Total current liabilities	1,259,220	1,120,292
Long-term finance lease liabilities	551,530	581,550
Long-term operating lease liabilities	60,433	—
Long-term advance from collaborator	84,309	82,573
Other long-term liabilities	8,014	26,280
Total liabilities	1,963,506	1,810,695
Commitments and contingencies	—	—
Shareholders' equity:		
Preferred stock, $0.01 par value; 1,000 shares authorized; none issued and outstanding	—	—
Common stock, $0.01 par value; 500,000 shares authorized, 256,671 and 255,172 shares issued and outstanding, respectively	2,565	2,546
Additional paid-in capital	7,564,331	7,421,476
Accumulated other comprehensive (loss) income	(3,201)	659
Accumulated deficit	(2,493,730)	(2,989,478)
Total shareholders' equity	5,069,965	4,435,203
Total liabilities and shareholders' equity	$ 7,033,471	$ 6,245,898

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

VERTEX PHARMACEUTICALS INCORPORATED
Condensed Consolidated Statements of Shareholders' Equity and Noncontrolling Interest
(unaudited)
(in thousands)

	Three Months Ended							
	Common Stock							
	Shares	Amount	Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Vertex Shareholders' Equity	Noncontrolling Interest	Total Shareholders' Equity
Balance at March 31, 2018	254,868	$ 2,541	$ 7,314,369	$ (39,743)	$ (4,876,111)	$ 2,401,056	$ 29,765	$ 2,430,821
Other comprehensive income, net of tax	—	—	—	35,138	—	35,138	—	35,138
Net income (loss)	—	—	—	—	207,360	207,360	(1,110)	206,250
Repurchase of common stock	(701)	(7)	(107,776)	—	—	(107,783)	—	(107,783)
Issuance of common stock under benefit plans	716	8	67,933	—	—	67,941	—	67,941
Stock-based compensation expense	—	—	82,516	—	—	82,516	—	82,516
Balance at June 30, 2018	254,883	$ 2,542	$ 7,357,042	$ (4,605)	$ (4,668,751)	$ 2,686,228	$ 28,655	$ 2,714,883
Balance at March 31, 2019	256,351	$ 2,561	$ 7,475,909	$ 6,000	$ (2,761,157)	$ 4,723,313	$ —	$ 4,723,313
Other comprehensive loss, net of tax	—	—	—	(9,201)	—	(9,201)	—	(9,201)
Net income	—	—	—	—	267,427	267,427	—	267,427
Repurchases of common stock	(296)	(3)	(52,007)	—	—	(52,010)	—	(52,010)
Issuance of common stock under benefit plans	616	7	50,494	—	—	50,501	—	50,501
Stock-based compensation expense	—	—	89,935	—	—	89,935	—	89,935
Balance at June 30, 2019	256,671	$ 2,565	$ 7,564,331	$ (3,201)	$ (2,493,730)	$ 5,069,965	$ —	$ 5,069,965

	Six Months Ended							
	Common Stock							
	Shares	Amount	Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Vertex Shareholders' Equity	Noncontrolling Interest	Total Shareholders' Equity
Balance at December 31, 2017	253,253	$ 2,512	$ 7,157,362	$ (11,572)	$ (5,119,723)	$ 2,028,579	$ 13,727	$ 2,042,306
Cumulative effect adjustment for adoption of new accounting guidance	—	—	—	(24,120)	33,349	9,229	—	9,229
Other comprehensive income, net of tax	—	—	—	31,087	—	31,087	—	31,087
Net income	—	—	—	—	417,623	417,623	15,928	433,551
Repurchase of common stock	(768)	(8)	(119,026)	—	—	(119,034)	—	(119,034)
Issuance of common stock under benefit plans	2,398	38	157,589	—	—	157,627	—	157,627
Stock-based compensation expense	—	—	161,117	—	—	161,117	—	161,117
Other VIE activity	—	—	—	—	—	—	(1,000)	(1,000)
Balance at June 30, 2018	254,883	$ 2,542	$ 7,357,042	$ (4,605)	$ (4,668,751)	$ 2,686,228	$ 28,655	$ 2,714,883
Balance at December 31, 2018	255,172	$ 2,546	$ 7,421,476	$ 659	$ (2,989,478)	$ 4,435,203	$ —	$ 4,435,203
Cumulative effect adjustment for adoption of new accounting guidance	—	—	—	—	(40,310)	(40,310)	—	(40,310)
Other comprehensive loss, net of tax	—	—	—	(3,860)	—	(3,860)	—	(3,860)
Net income	—	—	—	—	536,058	536,058	—	536,058
Repurchases of common stock	(860)	(9)	(155,840)	—	—	(155,849)	—	(155,849)
Issuance of common stock under benefit plans	2,359	28	114,517	—	—	114,545	—	114,545
Stock-based compensation expense	—	—	184,178	—	—	184,178	—	184,178
Balance at June 30, 2019	256,671	$ 2,565	$ 7,564,331	$ (3,201)	$ (2,493,730)	$ 5,069,965	$ —	$ 5,069,965

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

VERTEX PHARMACEUTICALS INCORPORATED
Condensed Consolidated Statements of Cash Flows
(unaudited)
(in thousands)

	Six Months Ended June 30,	
	2019	**2018**
Cash flows from operating activities:		
Net income	$ 536,058	$ 433,551
Adjustments to reconcile net income to net cash provided by operating activities:		
Stock-based compensation expense	183,478	160,572
Depreciation expense	54,838	34,402
Write-downs of inventories to net realizable value	7,042	6,928
Deferred income taxes	87,358	3,516
Unrealized gain on equity securities	(100,078)	(149,376)
Other non-cash items, net	(1,036)	10,014
Changes in operating assets and liabilities:		
Accounts receivable, net	(55,870)	(88,166)
Inventories	(25,174)	(9,366)
Prepaid expenses and other assets	(17,580)	33,408
Accounts payable	(28,074)	12,229
Accrued expenses	113,968	101,074
Other liabilities	33,603	25,574
Net cash provided by operating activities	788,533	574,360
Cash flows from investing activities:		
Purchases of available-for-sale debt securities	(263,636)	(202,002)
Maturities of available-for-sale debt securities	228,707	171,028
Expenditures for property and equipment	(34,399)	(58,891)
Investment in equity securities	(20,000)	(21,500)
Net cash used in investing activities	(89,328)	(111,365)
Cash flows from financing activities:		
Issuances of common stock under benefit plans	114,092	144,837
Repurchases of common stock	(155,849)	(115,033)
Payments on finance leases	(18,926)	—
Advance from collaborator	7,500	5,000
Repayments of advanced funding	(2,823)	(2,412)
Proceeds related to capital lease and construction financing lease obligations	1,002	9,566
Payments on capital lease and construction financing lease obligations	—	(14,061)
Other financing activities	—	(149)
Net cash (used in) provided by financing activities	(55,004)	27,748
Effect of changes in exchange rates on cash	(808)	(4,201)
Net increase in cash and cash equivalents	643,393	486,542
Cash, cash equivalents and restricted cash—beginning of period	2,658,253	1,667,526
Cash, cash equivalents and restricted cash—end of period	$ 3,301,646	$ 2,154,068
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 27,109	$ 33,444
Cash paid for income taxes	$ 10,902	$ 7,069
Capitalization of costs related to construction financing lease obligation	$ —	$ 5,176
Issuances of common stock from employee benefit plans receivable	$ 539	$ 13,634
Accrued share repurchase liability	$ —	$ 4,001

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

VERTEX PHARMACEUTICALS INCORPORATED
Notes to Condensed Consolidated Financial Statements
(unaudited)

A. Basis of Presentation and Accounting Policies

Basis of Presentation

The accompanying condensed consolidated financial statements are unaudited and have been prepared by Vertex Pharmaceuticals Incorporated ("Vertex" or the "Company") in accordance with accounting principles generally accepted in the United States of America ("GAAP").

The condensed consolidated financial statements reflect the operations of the Company and its wholly-owned subsidiaries. The Company's condensed consolidated financial statements for the interim period ended June 30, 2018 also include the financial results of BioAxone Biosciences, Inc. ("BioAxone"), a variable interest entity ("VIE") that the Company consolidated from 2014 through December 31, 2018. All material intercompany balances and transactions have been eliminated. The Company operates in one segment, pharmaceuticals. The Company has reclassified certain items from the prior year's condensed consolidated financial statements to conform to the current year's presentation.

Certain information and footnote disclosures normally included in the Company's 2018 Annual Report on Form 10-K have been condensed or omitted. These interim financial statements, in the opinion of management, reflect all normal recurring adjustments necessary for a fair presentation of the financial position and results of operations for the interim periods ended June 30, 2019 and 2018.

The results of operations for the interim periods are not necessarily indicative of the results of operations to be expected for the full fiscal year. These interim financial statements should be read in conjunction with the audited financial statements for the year ended December 31, 2018, which are contained in the 2018 Annual Report on Form 10-K.

Use of Estimates

The preparation of condensed consolidated financial statements in accordance with GAAP requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements, and the amounts of revenues and expenses during the reported periods. Significant estimates in these condensed consolidated financial statements have been made in connection with the calculation of revenues, research and development expenses, goodwill, deferred tax asset valuation allowances and the provision for or benefit from income taxes. The Company bases its estimates on historical experience and various other assumptions, including in certain circumstances future projections that management believes to be reasonable under the circumstances. Actual results could differ from those estimates. Changes in estimates are reflected in reported results in the period in which they become known.

Recently Adopted Accounting Standards

Leases

In 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* ("ASC 842"), which amends a number of aspects of lease accounting and requires entities to recognize right-of-use assets and liabilities on the balance sheet. ASC 842 became effective on January 1, 2019. The Company has finalized its review of its portfolio of existing leases and current accounting policies and has concluded that the amended guidance results in the recognition of additional assets and corresponding liabilities on its balance sheets. The Company also has finalized changes to its controls to address the adoption and ongoing lease accounting and related disclosure requirements of the new standard.

Until December 31, 2018, the Company applied build-to-suit accounting and was the deemed owner of its leased corporate headquarters in Boston and research site in San Diego, for which it was recognizing depreciation expense over the buildings' useful lives and imputed interest on the corresponding construction financing lease obligations. Under the amended guidance that became effective January 1, 2019, the Company accounts for these buildings as finance leases, resulting in increased depreciation expense over the respective lease terms of approximately 15 years, which are significantly shorter than the buildings' useful lives of 40 years. The Company also expects a reduction in its imputed interest expense in the initial years of each finance lease term. In 2019, the Company expects an increase in operating expenses of approximately $26 million and a decrease in interest expense of approximately $13 million due to this change.

VERTEX PHARMACEUTICALS INCORPORATED
Notes to Condensed Consolidated Financial Statements
(unaudited)

In July 2018, the FASB issued ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements* ("ASU 2018-11"), which offered a transition option to entities adopting ASC 842. Under ASU 2018-11, entities could elect to apply ASC 842 using a modified-retrospective adoption approach resulting in a cumulative effect adjustment to accumulated deficit at the beginning of the year in which the new lease standard is adopted, rather than adjustments to the earliest comparative period presented in their financial statements. The Company adopted ASC 842 using the modified-retrospective method. As of January 1, 2019, the Company recorded a cumulative effect adjustment to increase its "Accumulated deficit" by $40.3 million related to the adjustments to its build-to-suit leases described in the previous paragraph.

The Company elected the package of transition practical expedients for leases that commenced prior to January 1, 2019, allowing it not to reassess (i) whether any expired or existing contracts contain leases, (ii) the lease classification for any expired or existing leases and (iii) the initial indirect costs for any existing leases.

Additionally, the Company recorded, upon adoption of ASC 842 on January 1, 2019, operating lease assets of $61.7 million and corresponding liabilities of $71.9 million related to its real estate leases that are not treated as finance leases under ASC 842. The difference between these assets and liabilities is primarily attributable to prepaid or accrued lease payments. The Company also reclassified amounts that were recorded as "Capital lease obligations, current portion" and "Capital lease obligations, excluding current portion" as of December 31, 2018 to "Other current liabilities" and "Long-term finance lease liabilities," respectively, on January 1, 2019. These adjustments had no impact on the Company's condensed consolidated statement of operations and had no impact on the Company's accumulated deficit.

The cumulative effect of applying ASC 842 on the Company's condensed consolidated balance sheet as of January 1, 2019 was as follows:

	Balance as of December 31, 2018 ^	Adjustments	Balance as of January 1, 2019
Assets		**(in thousands)**	
Prepaid expenses and other current assets	$ 140,819	$ (2,930)	$ 137,889
Property and equipment, net	812,005	(53,920)	758,085
Deferred tax assets	1,499,672	11,236	1,510,908
Operating lease assets	—	61,674	61,674
Total assets	$ 6,245,898	$ 16,060	$ 6,261,958
Liabilities and Shareholders' Equity			
Capital lease obligations, current portion	$ 9,817	$ (9,817)	$ —
Other current liabilities	40,589	34,304	74,893
Capital lease obligations, excluding current portion	19,658	(19,658)	—
Construction financing lease obligation, excluding current portion	561,892	(561,892)	—
Long-term finance lease liabilities	—	569,487	569,487
Long-term operating lease liabilities	—	64,849	64,849
Other long-term liabilities	26,280	(20,903)	5,377
Accumulated deficit	(2,989,478)	(40,310)	(3,029,788)
Total liabilities and shareholders' equity	$ 6,245,898	$ 16,060	$ 6,261,958

^ As reported in the Company's 2018 Annual Report on Form 10-K.

Please refer to Note K, "Leases," for further information regarding the Company's leases as well as certain disclosures required by ASC 842.

Derivatives and Hedging

In 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging (Topic 815)* ("ASU 2017-12"), which helps simplify certain aspects of hedge accounting and enables entities to more accurately present their risk management activities in their financial statements. ASU 2017-12 became effective January 1, 2019. The adoption of ASU 2017-12 did not have a significant effect on the Company's condensed consolidated financial statements.

VERTEX PHARMACEUTICALS INCORPORATED
Notes to Condensed Consolidated Financial Statements
(unaudited)

Recently Issued Accounting Standards

Internal-Use Software

In 2018, the FASB issued ASU 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"), which clarifies the accounting for implementation costs in cloud computing arrangements. ASU 2018-15 is effective on January 1, 2020. Early adoption is permitted. The Company currently is evaluating the impact the adoption of ASU 2018-15 may have on its condensed consolidated financial statements.

Fair Value Measurement

In 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), which modifies the disclosure requirements for fair value measurements. ASU 2018-13 is effective on January 1, 2020. Early adoption is permitted. The Company currently is evaluating the impact the adoption of ASU 2018-13 may have on its disclosures.

Credit Losses

In 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which requires entities to record expected credit losses for certain financial instruments, including trade receivables, as an allowance that reflects the entity's current estimate of credit losses expected to be incurred. For available-for-sale debt securities in unrealized loss positions, ASU 2016-13 requires allowances to be recorded instead of reducing the amortized cost of the investment. ASU 2016-13 is effective on January 1, 2020. Early adoption is permitted. The Company currently is evaluating the impact the adoption of ASU 2016-13 may have on its condensed consolidated financial statements.

For a discussion of other recent accounting pronouncements please refer to Note A, "Nature of Business and Accounting Policies—Recent Accounting Pronouncements," in the 2018 Annual Report on Form 10-K.

Summary of Significant Accounting Policies

The Company's significant accounting policies are described in Note A, "Nature of Business and Accounting Policies," in its 2018 Annual Report on Form 10-K. The Company is disclosing changes in its accounting policies related to guidance that became effective January 1, 2019 in this Quarterly Report on Form 10-Q. Specifically, the Company has included its policy pursuant to its adoption of ASC 842 below.

Leases

At the inception of an arrangement, the Company determines whether the arrangement contains a lease. If a lease is identified in an arrangement, the Company recognizes a right-of-use asset and liability on its balance sheet and determines whether the lease should be classified as a finance or operating lease. The Company does not recognize assets or liabilities for leases with lease terms of less than 12 months.

A lease qualifies as a finance lease if any of the following criteria are met at the inception of the lease: (i) there is a transfer of ownership of the leased asset to the Company by the end of the lease term, (ii) the Company holds an option to purchase the leased asset that it is reasonably certain to exercise, (iii) the lease term is for a major part of the remaining economic life of the leased asset, (iv) the present value of the sum of lease payments equals or exceeds substantially all of the fair value of the leased asset, or (v) the nature of the leased asset is specialized to the point that it is expected to provide the lessor no alternative use at the end of the lease term. All other leases are recorded as operating leases.

Finance and operating lease assets and liabilities are recognized at the lease commencement date based on the present value of the lease payments over the lease term using the discount rate implicit in the lease. If the rate implicit is not readily determinable, the Company utilizes its incremental borrowing rate at the lease commencement date. Operating lease assets are further adjusted for prepaid or accrued lease payments. Operating lease payments are expensed using the straight-line method as an operating expense over the lease term. Finance lease assets are amortized to depreciation expense using the

straight-line method over the shorter of the useful life of the related asset or the lease term. Finance lease payments are bifurcated into (i) a portion that is recorded as imputed interest expense and (ii) a portion that reduces the finance liability associated with the lease.

The Company does not separate lease and non-lease components when determining which lease payments to include in the calculation of its lease assets and liabilities. Variable lease payments are expensed as incurred. If a lease includes an option to extend or terminate the lease, the Company reflects the option in the lease term if it is reasonably certain it will exercise the option.

Finance leases are recorded in “Property and equipment, net,” “Other current liabilities” and “Long-term finance lease liabilities” on the Company’s condensed consolidated balance sheet. Operating leases are recorded in “Operating lease assets,” “Other current liabilities” and “Long-term operating lease liabilities” on the Company’s condensed consolidated balance sheet.

B. Revenue Recognition

Disaggregation of Revenue

Revenues by Product

Product revenues, net consisted of the following:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(in thousands)			
SYMDEKO/SYMKEVI	$ 361,832	$ 185,558	$ 682,107	$ 219,682
ORKAMBI	316,441	311,261	609,448	665,327
KALYDECO	262,107	253,093	506,078	502,632
Total product revenues, net	$ 940,380	$ 749,912	$ 1,797,633	$ 1,387,641

Revenues by Geographic Location

Net product revenues are attributed to countries based on the location of the customer. Collaborative and royalty revenues are attributed to countries based on the location of the Company’s subsidiary associated with the collaborative arrangement related to such revenues. Total revenues from external customers and collaborators by geographic region consisted of the following:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(in thousands)			
United States	$ 700,618	$ 584,811	$ 1,341,721	$ 1,067,478
Outside of the United States				
Europe	180,196	135,914	347,947	267,809
Other	60,479	31,432	110,060	57,669
Total revenues outside of the United States	240,675	167,346	458,007	325,478
Total revenues	$ 941,293	$ 752,157	$ 1,799,728	$ 1,392,956

In the three and six months ended June 30, 2019 and 2018, revenues attributable to Germany contributed the largest amount to the Company’s European revenues.

French Early Access Programs

In 2015, the Company began distributing ORKAMBI through early access programs in France and it continues to be engaged in ongoing discussions regarding the price for ORKAMBI in France. The Company expects that the difference

between the amounts it has collected to date based on the invoiced price and the agreed-upon price for ORKAMBI in France will be returned to the French government.

Pursuant to the revenue recognition accounting guidance that was applicable until December 31, 2017, the Company's ORKAMBI net product revenues for 2015, 2016 and 2017 did not include any net product revenues from sales of ORKAMBI in France because the price was not fixed or determinable at the time of delivery. Upon adopting ASU 2014-09, *Revenues from Contracts with Customers (Topic 606)*, in the first quarter of 2018, the Company began recognizing net product revenues in France based on a transaction price that reflects its estimate of consideration it expects to retain that will not be subject to a significant reversal in amounts recognized. The Company's refund liability representing the difference between the amounts the Company has collected from the French government and the transaction price is classified as "Accrued expenses" on the Company's condensed consolidated balance sheets. If the Company's estimate regarding the amounts it will receive for ORKAMBI supplied pursuant to these early access programs changes, the Company will reflect the effect of the change in estimate in "Product revenues, net" in the period in which the change in estimate occurs.

Contract Liabilities

The Company recorded contract liabilities of $60.2 million and $24.9 million as of June 30, 2019 and December 31, 2018, respectively, related to annual contracts with government-owned and supported customers in international markets that limit the amount of annual reimbursement the Company can receive. Upon exceeding the annual reimbursement amount, products are provided free of charge, which is a material right. These contracts include upfront payments and fees. The Company defers a portion of the consideration received for shipments made up to the annual reimbursement limit as "Other current liabilities." The deferred amount is recognized as revenue when the free products are shipped. The Company's product revenue contracts include performance obligations that are one year or less.

In the majority of international markets in which the Company has a contract with an annual reimbursement limit, the annual period associated with the contract is the same as the Company's fiscal year, resulting in no contract liability balance at the end of the year and no revenues recognized in the current year related to performance obligations satisfied in previous years. Several of the Company's contract liabilities relate to contracts with annual reimbursement limits in international markets in which the annual period associated with the contract is not the same as the Company's fiscal year. In these markets, the Company recognizes revenues related to performance obligations satisfied in previous years; however, these amounts are not material to the Company's financial statements and do not relate to any performance obligations that were satisfied more than 12 months prior to the beginning of the current year.

C. Collaborative Arrangements and Acquisitions

The Company has entered into numerous agreements pursuant to which it collaborates with third parties on research, development and commercialization programs, including in-license and out-license agreements and acquisitions.

Certain of the Company's in-license and out-license agreements that had a significant impact on its financial statements for the three and six months ended June 30, 2019 and 2018, or were new during the three and six months ended June 30, 2019, are described below. Additional in-license and out-license agreements were described in Note B, "Collaborative Arrangements and Acquisitions," of the Company's 2018 Annual Report on Form 10-K.

In-license Agreements

The Company has entered into a number of license agreements in order to advance and obtain access to technologies and services related to its research and early-development activities. The Company is generally required to make an upfront payment upon execution of the license agreement; development, regulatory and commercialization milestones payments upon the achievement of certain product research, development and commercialization objectives; and royalty payments on future sales, if any, of commercial products resulting from the collaboration.

Pursuant to the terms of its in-license agreements, the Company's collaborators lead the discovery efforts and the Company leads all preclinical, development and commercialization activities associated with the advancement of any drug candidates and funds all expenses unless otherwise described below.

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The Company typically can terminate its in-license agreements by providing advance notice to its collaborators; the required length of notice is dependent on whether any product developed under the license agreement has received marketing approval. The Company's license agreements may be terminated by either party for a material breach by the other, subject to notice and cure provisions. Unless earlier terminated, these license agreements generally remain in effect until the date on which the royalty term and all payment obligations with respect to all products in all countries have expired.

CRISPR Therapeutics AG

In 2015, the Company entered into a strategic collaboration, option and license agreement (the "CRISPR Agreement") with CRISPR Therapeutics AG and its affiliates ("CRISPR") to collaborate on the discovery and development of potential new treatments aimed at the underlying genetic causes of human diseases using CRISPR-Cas9 gene-editing technology. The Company has the exclusive right to license certain CRISPR-Cas9-based targets. In connection with the CRISPR Agreement, the Company made an upfront payment to CRISPR of $75.0 million and an investment in CRISPR's stock. The Company has also made several subsequent investments in CRISPR's common stock, which has resulted in CRISPR becoming a related party of the Company. Please refer to Note F, "Marketable Securities and Equity Investments," for further information regarding the Company's investment in CRISPR's common stock.

For targets that the Company elects to license, other than hemoglobinopathy treatments, the Company leads all development and global commercialization activities. For each target that the Company elects to license, other than hemoglobinopathy targets, CRISPR has the potential to receive up to $420.0 million in development, regulatory and commercial milestones as well as royalties on net product sales. As part of the collaboration, the Company and CRISPR share equally all development costs and potential worldwide revenues related to potential hemoglobinopathy treatments, including treatments for beta thalassemia and sickle cell disease.

In 2017, the Company entered into a co-development and co-commercialization agreement with CRISPR pursuant to the terms of the CRISPR Agreement, under which the Company and CRISPR are co-developing and will co-commercialize CTX001 (the "CTX001 Co-Co Agreement") for the treatment of hemoglobinopathy, including treatments for sickle cell disease and beta thalassemia. The Company concluded that the CTX001 Co-Co Agreement is a cost-sharing arrangement, which results in the net impact of the arrangement being recorded in "Research and development expenses" in its condensed consolidated statements of operations. During the three and six months ended June 30, 2019 , the net expense related to the CTX001 Co-Co Agreement was $7.5 million and $14.6 million, respectively. During the three and six months ended June 30, 2018 , the net expense related to the CTX001 Co-Co Agreement was $5.2 million and $8.9 million, respectively.

In June 2019, the Company entered into a strategic collaboration and license agreement ("the CRISPR DMD/DM1 Agreement") with CRISPR, which became effective in July 2019 upon the expiration of the waiting period under the Hart-Scott Rodino Antitrust Improvements Act ("the HSR Act"). Pursuant to this agreement, Vertex received an exclusive worldwide license to CRISPR's existing and future intellectual property for duchenne muscular dystrophy ("DMD") and myotonic dystrophy type 1 ("DM1"). In July 2019, the Company remitted to CRISPR an upfront payment of $175.0 million, which it expects to record in "Research and development expenses" in the third quarter of 2019. CRISPR has the potential to receive up to $825.0 million in research, development, regulatory and commercial milestones for the DMD and DM1 programs as well as royalties on net product sales. CRISPR has the option to co-develop and co-commercialize all DM1 products globally and forego the milestones and royalties associated with the DM1 program. The Company will fund all expenses associated with the collaboration except for research costs for specified guide RNA research conducted by CRISPR, which the Company and CRISPR will share equally.

Kymera Therapeutics

In May 2019, the Company entered into a strategic research and development collaboration agreement (the "Kymera Agreement") with Kymera Therapeutics ("Kymera") to advance small molecule protein degraders against multiple targets. Pursuant to the Kymera Agreement, Kymera's proprietary platform technology is being applied in the collaboration activities in exchange for an upfront payment of $50.0 million. The Company has the exclusive right to license up to six protein targets, for each of which Kymera may receive up to $170.0 million in payments, including development, regulatory and commercial milestones as well as royalties on net product sales.

In addition to the upfront payment, the Company purchased $20.0 million of Kymera's preferred stock. The Company determined that the fair value of its investment in Kymera's preferred stock approximated $20.0 million and classified the investment, which does not have a readily determinable fair value, in "Other assets."

The Company determined that substantially all of the fair value of the Kymera Agreement was attributable to an in-process research and development asset and no substantive processes were acquired that would constitute a business. The Company concluded that it did not have any alternative future use for the acquired in-process research and development asset and recorded the $50.0 million upfront payment to "Research and development expenses."

BioAxone Biosciences, Inc.

The Company has licensed rights to certain drug candidates from these third-party collaborators, which has resulted in the consolidation of certain third-parties' financial statements into the Company's condensed consolidated financial statements as VIEs for certain periods of time. As of December 31, 2018, and continuing through the second quarter of 2019, the Company had no consolidated VIEs reflected in its financial statements.

In 2014, the Company entered into a license and collaboration agreement (the "BioAxone Agreement") with BioAxone, which resulted in the consolidation of BioAxone as a VIE beginning in October 2014. The Company deconsolidated BioAxone as of December 31, 2018 because it determined that it no longer was the primary beneficiary of BioAxone as it no longer had the power to direct the significant activities of BioAxone. Please refer to Note B, "Collaborative Arrangements and Acquisitions," in the Company's 2018 Annual Report on Form 10-K for further information on the deconsolidation of BioAxone.

In the six months ended June 30, 2018, the Company recorded net income attributable to noncontrolling interest of $15.9 million, which was primarily related to a $24.0 million increase in the fair value of the contingent payments payable by Vertex to BioAxone in the first quarter of 2018 due to (i) the expiration of an option held by the Company to purchase BioAxone in the first quarter of 2018 that increased the probability of a $10.0 million license continuation fee for VX-210 (which was ultimately paid in the first quarter of 2018) and (ii) the probability that additional milestone and royalty payments related to the BioAxone Agreement would be paid. Net income attributable to noncontrolling interest also included a $6.0 million provision for income taxes during the six months ended June 30, 2018 that was primarily related to the increase in the fair value of the contingent payments. The net loss attributable to noncontrolling interest in the three months ended June 30, 2018 was $1.1 million.

Acquisitions

Exonics Therapeutics

In June 2019, the Company entered into an agreement to acquire Exonics Therapeutics ("Exonics"), a privately held biotechnology company focused on creating transformative gene-editing therapies to repair mutations that cause DMD and other severe neuromuscular diseases, including DM1. In July 2019, the acquisition closed upon, among other things, the satisfaction of customary closing conditions and the expiration of the waiting period under the HSR Act, resulting in no financial statement impact during the three and six months ended June 30, 2019. At closing, the Company acquired all outstanding shares of Exonics and made an upfront payment of approximately $245.0 million with approximately $70.0 million in deferred payments, subject to customary closing adjustments. Exonics' equity holders may receive an additional $728.0 million upon the successful achievement of specified development and regulatory milestones for the DMD and DM1 programs. The Company will finalize the accounting treatment for the acquisition in the third quarter of 2019.

Out-license agreements

The Company has entered into licensing agreements pursuant to which it has out-licensed rights to certain drug candidates to third-party collaborators. Pursuant to these out-license agreements, the Company's collaborators become responsible for all costs related to the continued development of such drug candidates and obtain development and commercialization rights to these drug candidates. Depending on the terms of the agreements, the Company's collaborators may be required to make upfront payments, milestone payments upon the achievement of certain product research and development objectives and may also be required to pay royalties on future sales, if any, of commercial products resulting

from the collaboration. The termination provisions associated with these collaborations are generally the same as those described above related to the Company's in-license agreements. None of the Company's out-license agreements had a significant impact on the Company's condensed consolidated statement of operations during the three and six months ended June 30, 2019 and 2018.

Cystic Fibrosis Foundation

The Company has a research, development and commercialization agreement that was originally entered into in 2004 with Cystic Fibrosis Foundation ("CFF"), as successor in interest to the Cystic Fibrosis Foundation Therapeutics, Inc. This agreement was most recently amended in 2016 (the "2016 Amendment"). Pursuant to the agreement, as amended, the Company agreed to pay royalties ranging from low-single digits to mid-single digits on potential sales of certain compounds first synthesized and/or tested between March 1, 2014 and August 31, 2016, including VX-445 (elexacaftor), and tiered royalties ranging from single digits to sub-teens on any approved drugs first synthesized and/or tested during a research term on or before February 28, 2014, including KALYDECO (ivacaftor), ORKAMBI (lumacaftor in combination with ivacaftor) and SYMDEKO/SYMKEVI (tezacaftor in combination with ivacaftor). For combination products, such as ORKAMBI and SYMDEKO, sales are allocated equally to each of the active pharmaceutical ingredients in the combination product. There are no remaining commercial milestone payments payable by the Company to CFF pursuant to the agreement.

Pursuant to the 2016 Amendment, the Company received an upfront payment of $75.0 million and is receiving development funding from CFF of up to $6.0 million annually. The Company concluded that the upfront payment plus any future development funding represent a form of financing pursuant to ASC 730 and thus records the amounts as a liability on the condensed consolidated balance sheet, primarily reflected in "Long-term advance from collaborator." The Company reduces this liability over the estimated royalty term of the agreement and reflects the reductions as an offset to "Cost of sales" and as "Interest expense."

The Company has royalty obligations to CFF for ivacaftor, lumacaftor and tezacaftor until the expiration of patents covering those compounds. The Company has patents in the United States and European Union covering the composition-of-matter of ivacaftor that expire in 2027 and 2025, respectively, subject to potential patent extension. The Company has patents in the United States and European Union covering the composition-of-matter of lumacaftor that expire in 2030 and 2026, respectively, subject to potential extension. The Company has patents in the United States and European Union covering the composition-of-matter of tezacaftor that expire in 2027 and 2028, respectively, subject to potential extension.

D. Earnings Per Share

Basic net income per share attributable to Vertex common shareholders is based upon the weighted-average number of common shares outstanding during the period, excluding restricted stock, restricted stock units and performance-based restricted stock units, or "PSUs," that have been issued but are not yet vested. Diluted net income per share attributable to Vertex common shareholders is based upon the weighted-average number of common shares outstanding during the period plus additional weighted-average common equivalent shares outstanding during the period when the effect is dilutive.

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The following table sets forth the computation of basic and diluted net income per share for the periods ended:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(in thousands, except per share amounts)			
Basic net income attributable to Vertex per common share calculation:				
Net income attributable to Vertex common shareholders	$ 267,427	$ 207,360	$ 536,058	$ 417,623
Less: Undistributed earnings allocated to participating securities	—	(65)	—	(163)
Net income attributable to Vertex common shareholders—basic	$ 267,427	$ 207,295	$ 536,058	$ 417,460
Basic weighted-average common shares outstanding	256,154	254,135	255,941	253,685
Basic net income attributable to Vertex per common share	$ 1.04	$ 0.82	$ 2.09	$ 1.65
Diluted net income attributable to Vertex per common share calculation:				
Net income attributable to Vertex common shareholders	$ 267,427	$ 207,360	$ 536,058	$ 417,623
Less: Undistributed earnings allocated to participating securities	—	(64)	—	(160)
Net income attributable to Vertex common shareholders—diluted	$ 267,427	$ 207,296	$ 536,058	$ 417,463
Weighted-average shares used to compute basic net income per common share	256,154	254,135	255,941	253,685
Effect of potentially dilutive securities:				
Stock options	2,225	2,758	2,405	3,003
Restricted stock and restricted stock units (including PSUs)	1,440	1,689	1,655	1,851
Employee stock purchase program	3	2	14	18
Weighted-average shares used to compute diluted net income per common share	259,822	258,584	260,015	258,557
Diluted net income attributable to Vertex per common share	$ 1.03	$ 0.80	$ 2.06	$ 1.61

The Company did not include the securities in the following table in the computation of the net income per share attributable to Vertex common shareholders calculations because the effect would have been anti-dilutive during each period:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(in thousands)			
Stock options	3,207	2,253	3,022	1,943
Unvested restricted stock and restricted stock units (including PSUs)	3	6	4	5

E. Fair Value Measurements

The fair value of the Company's financial assets and liabilities reflects the Company's estimate of amounts that it would have received in connection with the sale of the assets or paid in connection with the transfer of the liabilities in an orderly transaction between market participants at the measurement date. In connection with measuring the fair value of its assets and liabilities, the Company seeks to maximize the use of observable inputs (market data obtained from sources independent from the Company) and to minimize the use of unobservable inputs (the Company's assumptions about how market participants would price assets and liabilities). The following fair value hierarchy is used to classify assets and liabilities based on the observable inputs and unobservable inputs used in order to value the assets and liabilities:

Level 1:	Quoted prices in active markets for identical assets or liabilities. An active market for an asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.
Level 2:	Observable inputs other than Level 1 inputs. Examples of Level 2 inputs include quoted prices in active markets for similar assets or liabilities and quoted prices for identical assets or liabilities in markets that are not active.
Level 3:	Unobservable inputs based on the Company's assessment of the assumptions that market participants would use in pricing the asset or liability.

The Company's investment strategy is focused on capital preservation. The Company invests in instruments that meet the credit quality standards outlined in the Company's investment policy. This policy also limits the amount of credit exposure to any one issue or type of instrument. The Company maintains strategic investments separately from the investment policy that governs its other cash, cash equivalents and marketable securities as described in "Note F, "Marketable Securities and Equity Investments." As of June 30, 2019, the Company's investments were in money market funds, U.S. Treasury securities, government-sponsored enterprise securities, corporate debt securities, commercial paper and corporate equity securities. Additionally, the Company utilizes foreign currency forward contracts intended to mitigate the effect of changes in foreign exchange rates on its condensed consolidated statement of operations.

As of June 30, 2019, all of the Company's financial assets and liabilities that were subject to fair value measurements were valued using observable inputs. The Company's financial assets valued based on Level 1 inputs consisted of money market funds, U.S. Treasury securities, government-sponsored enterprise securities and corporate equity securities. The Company's financial assets and liabilities valued based on Level 2 inputs consisted of certain corporate equity securities as described below, corporate debt securities, commercial paper, which consisted of investments in highly-rated investment-grade corporations, and foreign currency forward contracts with reputable and creditworthy counterparties. The Company has an investment in the common stock of Moderna Therapeutics, Inc. ("Moderna"), which became a publicly traded company in 2018. The Company has valued its investment in Moderna based on Level 2 inputs due to transfer restrictions subsequent to Moderna's initial public offering lasting until December 2019. The reduction in fair value recorded on the Company's condensed consolidated balance sheet related to this transfer restriction is not material to its financial statements. During the three and six months ended June 30, 2019 and 2018, the Company did not record any other-than-temporary impairment charges related to its financial assets.

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The following table sets forth the Company's financial assets and liabilities subject to fair value measurements (and does not include $1.7 billion and $1.4 billion of cash as of June 30, 2019 and December 31, 2018, respectively):

	Fair Value Measurements as of June 30, 2019			
		Fair Value Hierarchy		
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Financial instruments carried at fair value (asset positions):				
Cash equivalents:				
Money market funds	$ 1,561,770	$ 1,561,770	$ —	$ —
Government-sponsored enterprise securities	24,519	24,519	—	—
Commercial paper	22,234	—	22,234	—
Marketable securities:				
Corporate equity securities	267,401	253,442	13,959	—
U.S. Treasury securities	5,892	5,892	—	—
Government-sponsored enterprise securities	8,247	8,247	—	—
Corporate debt securities	249,426	—	249,426	—
Commercial paper	125,572	—	125,572	—
Prepaid expenses and other current assets:				
Foreign currency forward contracts	13,215	—	13,215	—
Other assets:				
Foreign currency forward contracts	314	—	314	—
Total financial assets	$ 2,278,590	$ 1,853,870	$ 424,720	$ —
Financial instruments carried at fair value (liability positions):				
Other current liabilities:				
Foreign currency forward contracts	$ (761)	$ —	$ (761)	$ —
Other long-term liabilities:				
Foreign currency forward contracts	(207)	—	(207)	—
Total financial liabilities	$ (968)	$ —	$ (968)	$ —

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	Fair Value Measurements as of December 31, 2018			
		Fair Value Hierarchy		
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Financial instruments carried at fair value (asset positions):				
Cash equivalents:				
Money market funds	$ 1,226,603	$ 1,226,603	$ —	$ —
U.S. Treasury securities	5,966	5,966	—	—
Government-sponsored enterprise securities	7,123	7,123	—	—
Commercial paper	58,268	—	58,268	—
Marketable securities:				
Corporate equity securities	167,323	153,733	13,590	—
U.S. Treasury securities	6,026	6,026	—	—
Government-sponsored enterprise securities	10,704	10,704	—	—
Corporate debt securities	233,665	—	233,665	—
Commercial paper	100,390	—	100,390	—
Prepaid expenses and other current assets:				
Foreign currency forward contracts	19,023	—	19,023	—
Other assets:				
Foreign currency forward contracts	1,514	—	1,514	—
Total financial assets	$ 1,836,605	$ 1,410,155	$ 426,450	$ —
Financial instruments carried at fair value (liability positions):				
Other current liabilities:				
Foreign currency forward contracts	$ (340)	$ —	$ (340)	$ —
Other long-term liabilities:				
Foreign currency forward contracts	(108)	—	(108)	—
Total financial liabilities	$ (448)	$ —	$ (448)	$ —

Please refer to Note F, “Marketable Securities and Equity Investments,” for the carrying amount and related unrealized gains (losses) by type of investment.

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F. Marketable Securities and Equity Investments

A summary of the Company's cash equivalents and marketable securities, which are recorded at fair value (and do not include $1.7 billion and $1.4 billion of cash as of June 30, 2019 and December 31, 2018, respectively), is shown below:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
As of June 30, 2019				
Cash equivalents:				
Money market funds	$ 1,561,770	$ —	$ —	$ 1,561,770
Government-sponsored enterprise securities	24,518	2	(1)	24,519
Commercial paper	22,233	2	(1)	22,234
Total cash equivalents	1,608,521	4	(2)	1,608,523
Marketable securities:				
U.S. Treasury securities	5,891	1	—	5,892
Government-sponsored enterprise securities	8,240	7	—	8,247
Corporate debt securities	249,076	373	(23)	249,426
Commercial paper	125,421	174	(23)	125,572
Total marketable debt securities	388,628	555	(46)	389,137
Corporate equity securities	133,157	140,328	(6,084)	267,401
Total marketable securities	$ 521,785	$ 140,883	$ (6,130)	$ 656,538
As of December 31, 2018				
Cash equivalents:				
Money market funds	$ 1,226,603	$ —	$ —	$ 1,226,603
U.S. Treasury securities	5,967	—	(1)	5,966
Government-sponsored enterprise securities	7,124	—	(1)	7,123
Commercial paper	58,271	—	(3)	58,268
Total cash equivalents	1,297,965	—	(5)	1,297,960
Marketable securities:				
U.S. Treasury securities	6,026	—	—	6,026
Government-sponsored enterprise securities	10,704	—	—	10,704
Corporate debt securities	234,088	27	(450)	233,665
Commercial paper	100,498	—	(108)	100,390
Total marketable debt securities	351,316	27	(558)	350,785
Corporate equity securities	133,157	40,619	(6,453)	167,323
Total marketable securities	$ 484,473	$ 40,646	$ (7,011)	$ 518,108

Available-for-sale debt securities were recorded in the Company's condensed consolidated balance sheets at fair value as follows:

	As of June 30, 2019	As of December 31, 2018
	(in thousands)	
Cash and cash equivalents	$ 1,608,523	$ 1,297,960
Marketable securities	389,137	350,785
Total	$ 1,997,660	$ 1,648,745

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Available-for-sale debt securities by contractual maturity were as follows:

	As of June 30, 2019	As of December 31, 2018
	(in thousands)	
Matures within one year	$ 1,968,686	$ 1,647,500
Matures after one year through five years	28,974	1,245
Total	$ 1,997,660	$ 1,648,745

The Company has a limited number of available-for-sale debt securities in insignificant loss positions as of June 30, 2019, which it does not intend to sell and has concluded it will not be required to sell before recovery of the amortized costs for the investments at maturity. The Company did not record any charges for other-than-temporary declines in the fair value of available-for-sale debt securities or gross realized gains or losses in the three and six months ended June 30, 2019 and 2018.

The Company maintains strategic investments separately from the investment policy that governs its other cash, cash equivalents and marketable securities. The Company's investments in the common stock of publicly traded companies, CRISPR and Moderna, as of June 30, 2019 and December 31, 2018, respectively, have readily determinable fair values and are recorded in "Marketable securities" on its condensed consolidated balance sheets. As of June 30, 2019 and December 31, 2018, the total fair value of the Company's strategic investments in the common stock of publicly traded companies, was$267.4 million and $167.3 million, respectively. During the three and six months ended June 30, 2019, the Company recorded unrealized gains of $56.5 million and $100.1 million, respectively. During the three and six months ended June 30, 2018 the Company recorded unrealized gains of $53.9 million and $149.4 million, respectively, primarily related to increases in the fair value of its investment in CRISPR.

As of June 30, 2019, the carrying value of the Company's equity investments without readily determinable fair values, which are recorded in "Other assets" on its condensed consolidated balance sheets, was $33.6 million.

G. Accumulated Other Comprehensive Income (Loss)

The following table summarizes the changes in accumulated other comprehensive income (loss) by component:

		Unrealized Holding Gains (Losses), Net of Tax		
	Foreign Currency Translation Adjustment	On Available-For-Sale Debt Securities	On Foreign Currency Forward Contracts	Total
		(in thousands)		
Balance at December 31, 2018	$ (11,227)	$ (536)	$ 12,422	$ 659
Other comprehensive income before reclassifications	1,091	1,047	5,793	7,931
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	(11,791)	(11,791)
Net current period other comprehensive income (loss)	1,091	1,047	(5,998)	(3,860)
Balance at June 30, 2019	$ (10,136)	$ 511	$ 6,424	$ (3,201)

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	Foreign Currency Translation Adjustment	Unrealized Holding Gains (Losses), Net of Tax			Total
		On Available-For-Sale Debt Securities	On Equity Securities	On Foreign Currency Forward Contracts	
	(in thousands)				
Balance at December 31, 2017	$ (21,031)	$ (594)	$ 25,069	$ (15,016)	$ (11,572)
Other comprehensive income (loss) before reclassifications	6,141	(87)	—	15,352	21,406
Amounts reclassified from accumulated other comprehensive income (loss)	—	—	—	9,681	9,681
Net current period other comprehensive income (loss)	6,141	(87)	—	25,033	31,087
Amounts reclassified to accumulated deficit pursuant to adoption of new accounting standard	949	—	(25,069)	—	(24,120)
Balance at June 30, 2018	$ (13,941)	$ (681)	$ —	$ 10,017	$ (4,605)

H. Hedging

Foreign currency forward contracts - Designated as hedging instruments

The Company maintains a hedging program intended to mitigate the effect of changes in foreign exchange rates for a portion of the Company's forecasted product revenues denominated in certain foreign currencies. The program includes foreign currency forward contracts that are designated as cash flow hedges under GAAP having contractual durations from one to eighteen months. The Company recognizes realized gains and losses for the effective portion of such contracts in "Product revenues, net" in its condensed consolidated statements of operations in the same period that it recognizes the product revenues that were impacted by the hedged foreign exchange rate changes.

The Company formally documents the relationship between foreign currency forward contracts (hedging instruments) and forecasted product revenues (hedged items), as well as the Company's risk management objective and strategy for undertaking various hedging activities, which includes matching all foreign currency forward contracts that are designated as cash flow hedges to forecasted transactions. The Company also formally assesses, both at the hedge's inception and on an ongoing basis, whether the foreign currency forward contracts are highly effective in offsetting changes in cash flows of hedged items. If the Company were to determine that a (i) foreign currency forward contract is not highly effective as a cash flow hedge, (ii) foreign currency forward contract has ceased to be a highly effective hedge or (iii) forecasted transaction is no longer probable of occurring, the Company would discontinue hedge accounting treatment prospectively. The Company measures effectiveness based on the change in fair value of the forward contracts and the fair value of the hypothetical foreign currency forward contracts with terms that match the critical terms of the risk being hedged. As of June 30, 2019, all hedges were determined to be highly effective.

The Company considers the impact of its counterparties' credit risk on the fair value of the foreign currency forward contracts. As of June 30, 2019 and December 31, 2018, credit risk did not change the fair value of the Company's foreign currency forward contracts.

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The following table summarizes the notional amount of the Company's outstanding foreign currency forward contracts designated as cash flow hedges under GAAP:

Foreign Currency	As of June 30, 2019	As of December 31, 2018
	(in thousands)	
Euro	$ 448,778	$ 335,179
British pound sterling	65,278	73,460
Australian dollar	77,010	52,820
Canadian dollar	47,950	43,759
Total foreign currency forward contracts	$ 639,016	$ 505,218

Foreign currency forward contracts - Not designated as hedging instruments

The Company also enters into foreign currency forward contracts with contractual maturities of less than one month, which are designed to mitigate the effect of changes in foreign exchange rates on monetary assets and liabilities, including intercompany balances. These contracts are not designated as hedging instruments under GAAP. The Company recognizes realized gains and losses for such contracts in "Other income, net" in its condensed consolidated statements of operations each period. As of June 30, 2019, the notional amount of the Company's outstanding foreign currency forward contracts where hedge accounting under GAAP is not applied was $352.0 million.

During the three and six months ended June 30, 2019 and 2018, the Company recognized the following related to foreign currency forward contacts in its condensed consolidated statements of operations:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(in thousands)			
Designated as hedging instruments - Reclassified from AOCI				
Product revenues, net	$ 8,238	$ (2,675)	$ 15,077	$ (9,159)
Not designated as hedging instruments				
Other income, net	$ (1,089)	$ (4,152)	$ 2,062	$ (2,614)

The following table summarizes the fair value of the Company's outstanding foreign currency forward contracts designated as cash flow hedges under GAAP included on its condensed consolidated balance sheets:

As of June 30, 2019

Assets		Liabilities	
Classification	Fair Value	Classification	Fair Value
	(in thousands)		
Prepaid expenses and other current assets	$ 13,215	Other current liabilities	$ (761)
Other assets	314	Other long-term liabilities	(207)
Total assets	$ 13,529	Total liabilities	$ (968)

As of December 31, 2018

Assets		Liabilities	
Classification	Fair Value	Classification	Fair Value
	(in thousands)		
Prepaid expenses and other current assets	$ 19,023	Other current liabilities	$ (340)
Other assets	1,514	Other long-term liabilities	(108)
Total assets	$ 20,537	Total liabilities	$ (448)

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As of June 30, 2019, the Company expects amounts that are related to foreign exchange forward contracts designated as cash flow hedges under GAAP recorded in "Prepaid expenses and other current assets" and "Other current liabilities" to be reclassified to earnings within twelve months.

The following table summarizes the potential effect of offsetting derivatives by type of financial instrument designated as cash flow hedges under GAAP on the Company's condensed consolidated balance sheets:

	As of June 30, 2019				
	Gross Amounts Recognized	Gross Amounts Offset	Gross Amounts Presented	Gross Amounts Not Offset	Legal Offset
Foreign currency forward contracts			(in thousands)		
Total assets	$ 13,529	$ —	$ 13,529	$ (968)	$ 12,561
Total liabilities	$ (968)	$ —	$ (968)	$ 968	$ —

	As of December 31, 2018				
	Gross Amounts Recognized	Gross Amounts Offset	Gross Amounts Presented	Gross Amounts Not Offset	Legal Offset
Foreign currency forward contracts			(in thousands)		
Total assets	$ 20,537	$ —	$ 20,537	$ (448)	$ 20,089
Total liabilities	$ (448)	$ —	$ (448)	$ 448	$ —

I. Inventories

Inventories consisted of the following:

	As of June 30, 2019	As of December 31, 2018
	(in thousands)	
Raw materials	$ 12,957	$ 9,677
Work-in-process	91,874	87,944
Finished goods	38,186	26,739
Total	$ 143,017	$ 124,360

J. Revolving Credit Facility

In October 2016, the Company entered into a Credit Agreement (the "Credit Agreement") with Bank of America, N.A., as administrative agent and the lenders referred to therein. The Credit Agreement provides for a $500.0 million revolving facility, $300.0 million of which was drawn at closing (the "Loans") and was repaid in February 2017. The Credit Agreement also provides that, subject to satisfaction of certain conditions, the Company may request that the borrowing capacity under the Credit Agreement be increased by an additional $300.0 million. The Credit Agreement matures on October 13, 2021.

The Loans will bear interest, at the Company's option, at either a base rate or a Eurodollar rate, in each case plus an applicable margin. Under the Credit Agreement, the applicable margins on base rate loans range from 0.75% to 1.50% and the applicable margins on Eurodollar loans range from 1.75% to 2.50%, in each case based on the Company's consolidated leverage ratio (the ratio of the Company's total consolidated debt to the Company's trailing twelve-month EBITDA).

The Loans are guaranteed by certain of the Company's domestic subsidiaries and secured by substantially all of the Company's assets and the assets of the Company's domestic subsidiaries (excluding intellectual property, owned and leased real property and certain other excluded property) and by the equity interests of the Company's subsidiaries, subject to certain exceptions. Under the terms of the Credit Agreement, the Company must maintain, subject to certain limited exceptions, a consolidated leverage ratio of 3.00 to 1.00 and consolidated EBITDA of at least $200.0 million, in each case measured on a quarterly basis.

The Credit Agreement contains customary representations and warranties and usual and customary affirmative and negative covenants. The Credit Agreement also contains customary events of default. In the case of a continuing event of default, the administrative agent would be entitled to exercise various remedies, including the acceleration of amounts due under outstanding loans.

K. Leases

Finance Leases

The Company's finance lease assets and liabilities primarily relate to its corporate headquarters in Boston and research site in San Diego (the "Buildings"). These Buildings are classified as finance leases because the present value of the sum of the lease payments associated with the Buildings exceeds substantially all of the fair value of the Buildings. The Company also has outstanding finance leases for equipment.

Prior to the adoption of ASC 842 on January 1, 2019, the Company was deemed for accounting purposes to be the owner of the Buildings during their construction periods and recorded project construction costs incurred by its landlords. Upon completion of the Buildings, the Company determined that the underlying leases did not meet the criteria for "sale-leaseback" treatment. Accordingly, the Company depreciated the Buildings over 40 years and recorded interest expense associated with the financing obligations for the Buildings. The Company bifurcated the lease payments pursuant to the Buildings into (i) a portion that was allocated to the buildings and (ii) a portion that is allocated to the land on which the buildings were constructed. The portion of the lease obligations allocated to the land was treated as an operating lease.

Pursuant to ASC 842, the Company adjusted the amounts recorded on its condensed consolidated balance sheet as of January 1, 2019 for the Buildings to reflect the present value of the lease payments over the remaining lease term related to the Buildings. The finance lease assets associated with the Buildings are amortized to depreciation expense using the straight-line method over the remaining lease term, which is significantly shorter than the Buildings' useful lives. The Company continues to record interest expense associated with the finance lease liabilities for the Buildings.

Corporate Headquarters

In 2011, the Company entered into two lease agreements, pursuant to which the Company leases approximately 1.1 million square feet of office and laboratory space in two buildings in Boston, Massachusetts for a term of 15 years. Base rent payments commenced in December 2013, and will continue through December 2028. The Company utilizes this initial period as its lease term. The Company has an option to extend the lease terms for an additional ten years.

San Diego Lease

In 2015, the Company entered into a lease agreement pursuant to which the Company leases approximately 170,000 square feet of office and laboratory space in San Diego, California for a term of 16 years. Base rent payments commenced in the second quarter of 2019, and will continue through May 2034. The Company utilizes this initial period as its lease term. The Company has an option to extend the lease term for up to two additional five-year terms. The Company placed this building in service in the second quarter of 2018.

Operating Leases

The Company's operating leases relate to its real estate leases that are not classified as finance leases.

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Aggregate Lease Information Related to the Application of ASC 842

The following information is disclosed in accordance with ASC 842, which became effective January 1, 2019. The components of lease cost recorded in the Company's condensed consolidated statement of operations were as follows:

	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
	(in thousands)	
Operating lease cost	$ 2,629	$ 5,268
Finance lease cost		
Amortization of leased assets	12,063	24,428
Interest on lease liabilities	13,375	26,824
Variable lease cost	6,036	12,798
Sublease income	(1,687)	(3,171)
Net lease cost	$ 32,416	$ 66,147

The Company's variable lease cost during the three and six months ended June 30, 2019 primarily related to operating expenses, taxes and insurance associated with its finance leases. The Company's sublease income during the three and six months ended June 30, 2019 primarily related to subleases for an insignificant portion of the Company's corporate headquarters.

The Company's leases are included on its condensed consolidated balance sheets as follows:

	As of June 30, 2019	As of December 31, 2018 ^
	(in thousands)	
Finance leases		
Property and equipment, net	$ 461,549	$ 640,952
Total finance lease assets	$ 461,549	$ 640,952
Capital lease obligations, current portion	$ —	$ 9,817
Other current liabilities	37,047	5,271
Capital lease obligations, excluding current portion	—	19,658
Construction financing lease obligation, excluding current portion	—	561,892
Long-term finance lease liabilities	551,530	—
Total finance lease liabilities	$ 588,577	$ 596,638
Operating leases		
Operating lease assets	$ 58,031	$ —
Total operating lease assets	$ 58,031	$ —
Other current liabilities	$ 7,941	$ —
Long-term operating lease liabilities	60,433	—
Total operating lease liabilities	$ 68,374	$ —

^ As reported in the Company's 2018 Annual Report on Form 10-K.

Maturities of the Company's finance and operating lease liabilities in accordance with ASC 842 as of June 30, 2019 were as follows:

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Year	Finance Leases	Operating Leases	Total
		(in thousands)	
Remainder of 2019	$ 39,157	$ 4,828	$ 43,985
2020	89,159	10,245	99,404
2021	87,525	8,528	96,053
2022	85,177	8,090	93,267
2023	84,253	8,005	92,258
Thereafter	513,206	45,729	558,935
Total lease payments	898,477	85,425	983,902
Less: amount representing interest	(309,900)	(17,051)	(326,951)
Present value of lease liabilities	$ 588,577	$ 68,374	$ 656,951

The weighted-average remaining lease terms and discount rates related to the Company's leases were as follows:

	As of June 30, 2019
Weighted-average remaining lease term (in years)	
Finance leases	10.24
Operating leases	10.83
Weighted-average discount rate	
Finance leases	9.10%
Operating leases	4.06%

Please refer to Note O, "Additional Cash Flow Information," for cash flow impact of the Company's leases.

Additional Lease Information Related to the Application of ASC 840

The following information is disclosed in accordance with ASC 840, *Leases (Topic 840)* ("ASC 840"), which was applicable until December 31, 2018. As of December 31, 2018, future minimum commitments under the Company's real estate leases with initial terms of more than one year were as follows:

Year	Fan Pier Leases	San Diego Lease	Other Leases	Total Lease Commitments
		(in thousands)		
2019	$ 66,540	$ 5,324	$ 13,207	$ 85,071
2020	72,589	9,127	14,270	95,986
2021	72,589	9,127	12,529	94,245
2022	72,589	9,127	12,045	93,761
2023	72,589	9,530	11,952	94,071
Thereafter	389,855	119,864	65,472	575,191
Total minimum lease payments	$ 746,751	$ 162,099	$ 129,475	$ 1,038,325

As of December 31, 2018, the Company's total sublease income to be received related to its facility leases was $6.2 million. During the three and six months ended June 30, 2018, rental expenses were $4.2 million and $8.8 million, respectively.

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As of December 31, 2018, the Company had outstanding capital leases totaling gross property and equipment of $94.8 million and accumulated depreciation of $34.0 million. The capital leases, which were related to equipment and leasehold improvements, bore interest at rates ranging from less than 1% to 6% per year. The Company's capital lease amortization was included in depreciation expense during the three and six months ended June 30, 2018. The following table set forth the Company's future minimum payments due under capital leases as of December 31, 2018:

Year	(in thousands)
2019	$ 10,770
2020	7,282
2021	5,649
2022	3,300
2023	1,974
Thereafter	3,085
Total payments	32,060
Less: amount representing interest	(2,585)
Present value of payments	$ 29,475

L. Stock-based Compensation Expense and Share Repurchase

Stock-based compensation expense

During the three and six months ended June 30, 2019 and 2018, the Company recognized the following stock-based compensation expense:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(in thousands)			
Stock-based compensation expense by type of award:				
Restricted stock and restricted stock units (including PSUs)	$ 60,966	$ 51,497	$ 124,476	$ 101,915
Stock options	26,160	28,591	54,316	54,646
ESPP share issuances	2,809	2,428	5,386	4,556
Stock-based compensation expense related to inventories	(248)	(80)	(700)	(545)
Total stock-based compensation included in costs and expenses	$ 89,687	$ 82,436	$ 183,478	$ 160,572
Stock-based compensation expense by line item:				
Cost of sales	$ 1,503	$ 1,191	$ 2,841	$ 2,004
Research and development expenses	55,632	51,612	115,347	100,100
Sales, general and administrative expenses	32,552	29,633	65,290	58,468
Total stock-based compensation included in costs and expenses	89,687	82,436	183,478	160,572
Income tax effect	(26,118)	5,030	(65,642)	(16,829)
Total stock-based compensation included in costs and expenses, net of tax	$ 63,569	$ 87,466	$ 117,836	$ 143,743

The following table sets forth the Company's unrecognized stock-based compensation expense as of June 30, 2019, by type of award and the weighted-average period over which that expense is expected to be recognized:

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	As of June 30, 2019	
	Unrecognized Expense	Weighted-average Recognition Period
	(in thousands)	(in years)
Type of award:		
Restricted stock and restricted stock units (including PSUs)	$ 408,282	2.37
Stock options	$ 164,006	2.69
ESPP share issuances	$ 6,364	0.62

The following table summarizes information about stock options outstanding and exercisable as of June 30, 2019:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Number Outstanding	Weighted-average Remaining Contractual Life	Weighted-average Exercise Price	Number Exercisable	Weighted-average Exercise Price
	(in thousands)	(in years)	(per share)	(in thousands)	(per share)
$29.07–$40.00	204	1.67	$ 36.87	204	$ 36.87
$40.01–$60.00	401	2.96	$ 49.90	401	$ 49.90
$60.01–$80.00	305	4.87	$ 73.09	298	$ 73.02
$80.01–$100.00	2,367	6.65	$ 89.22	1,459	$ 89.74
$100.01–$120.00	616	5.60	$ 109.31	610	$ 109.26
$120.01–$140.00	746	6.14	$ 130.24	685	$ 130.31
$140.01–$160.00	1,245	8.59	$ 155.51	407	$ 155.39
$160.01–$180.00	523	8.14	$ 163.28	236	$ 163.59
$180.01–$189.38	1,787	9.38	$ 185.32	243	$ 184.18
Total	8,194	7.14	$ 126.39	4,543	$ 106.24

Share repurchase program

In January 2018, the Company's Board of Directors approved a share repurchase program (the "2018 Share Repurchase Program"), pursuant to which the Company was authorized to repurchase up to $500.0 million of its common stock between February 1, 2018 and December 31, 2019. As of June 30, 2019, the Company had repurchased the entire $500.0 million it was authorized to repurchase of its common stock under the 2018 Share Repurchase Program. Under the 2018 Share Repurchase Program, the Company was authorized to purchase shares from time to time through open market or privately negotiated transactions. Such purchases were made pursuant to Rule 10b5-1 plans or other means as determined by the Company's management and in accordance with the requirements of the SEC.

During the six months ended June 30, 2019, the Company repurchased 832,186 shares of its common stock under the 2018 Share Repurchase Program for an aggregate of $150.0 million including commissions and fees. During the six months ended June 30, 2018, the Company repurchased 767,551 shares of its common stock under the 2018 Share Repurchase Program for an aggregate of $119.0 million including commissions and fees.

In July 2019, the Company's Board of Directors approved a new share repurchase program, pursuant to which the Company is authorized to repurchase up to $500.0 million of its common stock between August 1, 2019 and December 31, 2020.

M. Income Taxes

The Company is subject to U.S. federal, state, and foreign income taxes. For the three and six months ended June 30, 2019, the Company recorded provisions for income taxes of $59.7 million and $111.2 million, respectively. The Company's effective tax rate for the three and six months ended June 30, 2019 is lower than the U.S. statutory rate primarily due to

excess tax benefits related to stock-based compensation and utilization of net operating losses to offset pre-tax operating income. The Company's provision for income taxes in 2019 has increased compared to historical amounts due to the release of the Company's valuation allowance on the majority of its net operating losses and other deferred tax assets as of December 31, 2018. Starting in 2019, the Company began recording a provision for income taxes on its pre-tax income using an estimated effective tax rate that approximates statutory rates. Due to the Company's ability to offset its pre-tax income against previously benefited net operating losses, it expects the majority of its tax provision to represent a non-cash expense until its net operating losses have been fully utilized.

During the three and six months ended June 30, 2018, the Company's income taxes included excess tax benefits related to stock-based compensation, a provision for income taxes related to BioAxone's income taxes and the Company's U.S. state and foreign taxes.

As noted above, the Company released the valuation allowance on the majority of net operating losses and other deferred tax assets and maintained a valuation allowance of $168.5 million related primarily to U.S. state and foreign tax attributes as of December 31, 2018. On a periodic basis, the Company reassesses any valuation allowances that it maintains on its deferred tax assets, weighing positive and negative evidence to assess the recoverability of the deferred tax assets.

The Company has reviewed the tax positions taken, or to be taken, in its tax returns for all tax years currently open to examination by a taxing authority. Unrecognized tax benefits represent the aggregate tax effect of differences between tax return positions and the benefits recognized in the financial statements. As of June 30, 2019 and December 31, 2018, the Company had $27.5 million and $19.5 million, respectively, of gross unrecognized tax benefits, which would affect the Company's tax rate if recognized. The Company does not expect that its unrecognized tax benefits will materially increase within the next twelve months. The Company accrues interest and penalties related to unrecognized tax benefits as a component of its provision for income taxes. As of June 30, 2019, no significant interest or penalties were accrued. The Company did not recognize any material interest or penalties related to uncertain tax positions during the three and six months ended June 30, 2019 and 2018.

As of June 30, 2019, foreign earnings, which were not significant, have been retained indefinitely by foreign subsidiaries for indefinite reinvestment. Upon repatriation of those earnings, in the form of dividends or otherwise, the Company could be subject to withholding taxes payable to the various foreign countries.

The Company files U.S. federal income tax returns and income tax returns in various state, local and foreign jurisdictions. The Company is no longer subject to any tax assessment from an income tax examination in the United States or any other major taxing jurisdiction for years before 2011, except where the Company has net operating losses or tax credit carryforwards that originate before 2011. The Company has various income tax audits ongoing at any time throughout the world. No adjustments have been reported for any jurisdiction under audit.

N. Commitments and Contingencies

Guaranties and Indemnifications

As permitted under Massachusetts law, the Company's Articles of Organization and By-laws provide that the Company will indemnify certain of its officers and directors for certain claims asserted against them in connection with their service as an officer or director. The maximum potential amount of future payments that the Company could be required to make under these indemnification provisions is unlimited. However, the Company has purchased directors' and officers' liability insurance policies that could reduce its monetary exposure and enable it to recover a portion of any future amounts paid. No indemnification claims currently are outstanding, and the Company believes the estimated fair value of these indemnification arrangements is minimal.

The Company customarily agrees in the ordinary course of its business to indemnification provisions in agreements with clinical trial investigators and sites in its drug development programs, sponsored research agreements with academic and not-for-profit institutions, various comparable agreements involving parties performing services for the Company and its real estate leases. The Company also customarily agrees to certain indemnification provisions in its drug discovery, development and commercialization collaboration agreements. With respect to the Company's clinical trials and sponsored research agreements, these indemnification provisions typically apply to any claim asserted against the investigator or the

investigator's institution relating to personal injury or property damage, violations of law or certain breaches of the Company's contractual obligations arising out of the research or clinical testing of the Company's compounds or drug candidates. With respect to lease agreements, the indemnification provisions typically apply to claims asserted against the landlord relating to personal injury or property damage caused by the Company, to violations of law by the Company or to certain breaches of the Company's contractual obligations. The indemnification provisions appearing in the Company's collaboration agreements are similar to those for the other agreements discussed above, but in addition provide some limited indemnification for its collaborator in the event of third-party claims alleging infringement of intellectual property rights. In each of the cases above, the indemnification obligation generally survives the termination of the agreement for some extended period, although the Company believes the obligation typically has the most relevance during the contract term and for a short period of time thereafter. The maximum potential amount of future payments that the Company could be required to make under these provisions is generally unlimited. The Company has purchased insurance policies covering personal injury, property damage and general liability that reduce its exposure for indemnification and would enable it in many cases to recover all or a portion of any future amounts paid. The Company has never paid any material amounts to defend lawsuits or settle claims related to these indemnification provisions. Accordingly, the Company believes the estimated fair value of these indemnification arrangements is minimal.

Other Contingencies

The Company has certain contingent liabilities that arise in the ordinary course of its business activities. The Company accrues a reserve for contingent liabilities when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. There were no material contingent liabilities accrued as of June 30, 2019 or December 31, 2018.

O. Additional Cash Flow Information

The cash, cash equivalents and restricted cash at the beginning and ending of each period presented in the Company's condensed consolidated statements of cash flows consisted of the following:

	Six Months Ended June 30,			
	2019		2018	
	Beginning of period	End of period	Beginning of period	End of period
	(in thousands)			
Cash and cash equivalents	$ 2,650,134	$ 3,294,684	$ 1,665,412	$ 2,145,359
Prepaid expenses and other current assets	4,910	6,962	2,114	8,709
Other assets	3,209	—	—	—
Cash, cash equivalents and restricted cash per statement of cash flows	$ 2,658,253	$ 3,301,646	$ 1,667,526	$ 2,154,068

Supplemental cash flow information related to the Company's leases was as follows:

	Six Months Ended June 30, 2019
	(in thousands)
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	$ 5,055
Operating cash flows from finance leases	$ 24,635
Financing cash flows from finance leases	$ 18,926
Right-of-use assets obtained in exchange for lease obligations	
Operating leases	$ —
Finance leases	$ —

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

OVERVIEW

We invest in scientific innovation to create transformative medicines for people with serious diseases. Our business is focused on developing and commercializing therapies for the treatment of cystic fibrosis, or CF, and advancing our research and development programs in other serious diseases. Our marketed products are SYMDEKO/SYMKEVI (tezacaftor in combination with ivacaftor), ORKAMBI (lumacaftor in combination with ivacaftor) and KALYDECO (ivacaftor), which are collectively approved to treat approximately half of the 75,000 CF patients in North America, Europe and Australia. Our triple combination regimen, if approved, would significantly increase the number of CF patients eligible for our products and could provide an improved treatment option for a majority of the patients currently eligible for our products.

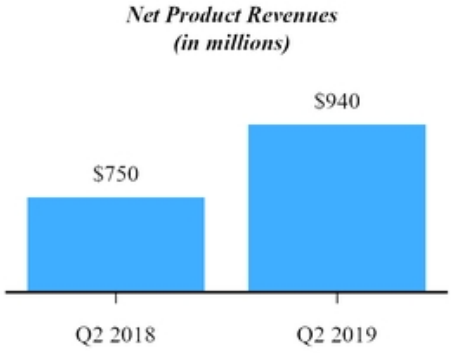
In July 2019, we submitted a New Drug Application, or NDA, to the United States Food and Drug Administration, or FDA, for the triple combination of VX-445 (elexacaftor), tezacaftor and ivacaftor. We expect to submit a Marketing Authorization Application, or MAA, in Europe in the fourth quarter of 2019 for this triple combination regimen. These filings were based on positive data from Phase 3 clinical trials evaluating the triple combination of VX-445 (elexacaftor), tezacaftor and ivacaftor in patients 12 years of age or older (i) who have a copy of the *F508del* mutation in their *CFTR* gene and a second mutation that results in minimal *CFTR* function, whom we refer to as F508del/Min patients; and (ii) who have two copies of the *F508del* mutation, whom we refer to as F508del homozygous patients.

We also are progressing earlier-stage programs in alpha-1 antitrypsin deficiency, APOL1-mediated kidney diseases, beta thalassemia, sickle cell disease and pain. In addition, we recently enhanced our gene-editing capabilities by expanding our collaboration with CRISPR Therapeutics and acquiring Exonics Therapeutics in order to support the development of novel therapies for duchenne muscular dystrophy and myotonic dystrophy type 1.

Second quarter of 2019 Financial Highlights

Revenues

In the second quarter of 2019, our net product revenues continued to increase due to the approval of our third CF medicine, SYMDEKO/SYMKEVI, in 2018 and continued strong net product revenues from KALYDECO and ORKAMBI.

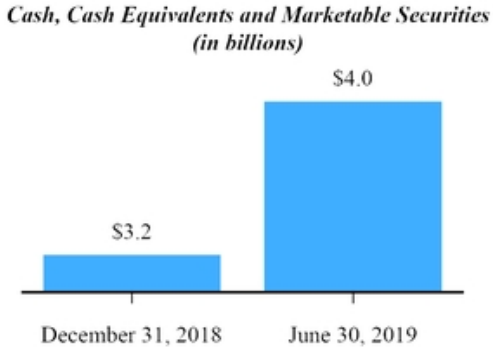


Expenses

In the second quarter of 2019, combined R&D and SG&A expenses increased by 13% from $474.8 million in the second quarter of 2018 to $535.6 million. In the second quarter of 2019, cost of sales was 14% of our net product revenues.

Balance Sheet

Increased balance sheet strength driven by earnings.



Business Highlights

Cystic Fibrosis

- Announced final data from two Phase 3 clinical trials evaluating the triple combination of VX-445, tezacaftor and ivacaftor.
- Submitted an NDA to the FDA for the triple combination of elexacaftor, tezacaftor, and ivacaftor.
- Preparing an MAA submission in Europe for the triple combination of elexacaftor, tezacaftor, and ivacaftor for the fourth quarter of 2019.
- Obtained approval for SYMDEKO in the United States for children 6 to 11 years of age.
- Obtained approval for ORKAMBI in Australia for children 2 to 5 years of age.
- Obtained approval for KALYDECO in Australia for children 12 to <24 months of age.
- Enrollment ongoing in Phase 3 clinical trial evaluating elexacaftor, tezacaftor, and ivacaftor in children ages 6 to 11 years of age.
- Evaluating the once-daily potentiator VX-561 in an ongoing Phase 2 dose-ranging clinical trial.
- Evaluating the next-generation corrector, VX-121, in a once-daily triple combination with VX-561 and tezacaftor in an ongoing Phase 2 clinical trial.

Expanding Pipeline

- We have completed our evaluation of single and multiple doses of VX-814, our first investigational molecule for the treatment of alpha-1 antitrypsin deficiency, or AAT. Based on safety, tolerability and pharmacokinetic data from this clinical trial, we plan to advance VX-814 into a Phase 2 dose-ranging clinical trial in AAT patients with two copies of the Z mutation.
- Advanced VX-864, a second investigational small molecule corrector for the treatment of AAT, into Phase 1 clinical development.
- Initiated a Phase 1 clinical trial to evaluate VX-147, our first investigational small molecule for the treatment of APOL1-mediated focal segmental glomerulosclerosis, or FSGS, and other serious kidney diseases.
- With our collaborator CRISPR Therapeutics AG, dosed the first patient in a Phase 1/2 clinical trial of severe sickle cell disease using the novel gene-editing therapy CTX001.

Business Development

- Expanded into duchenne muscular dystrophy, or DMD, and myotonic dystrophy type 1, or DM1, through our expanded collaboration with CRISPR Therapeutics AG and our acquisition of Exonics Therapeutics.
- Entered into strategic research and development collaboration with Kymera Therapeutics to advance small molecule protein degraders against multiple targets.

Transition

In July 2019, we announced that effective April 1, 2020, Dr. Jeffrey Leiden will transition to the role of Executive Chairman and Dr. Reshma Kewalramani will be appointed as our new Chief Executive Officer and President.

Research

We plan to continue investing in our research programs and fostering scientific innovation in order to identify and develop transformative medicines. We believe that pursuing research in diverse areas allows us to balance the risks inherent in drug development and may provide drug candidates that will form our pipeline in future years. To supplement our internal research programs, we collaborate with biopharmaceutical and technology companies, leading academic research institutions, government laboratories, foundations and other organizations as needed to advance research in our areas of therapeutic interest and to access technologies needed to execute on our strategy.

Drug Discovery and Development

Discovery and development of a new pharmaceutical product is a difficult and lengthy process that requires significant financial resources along with extensive technical and regulatory expertise. Potential drug candidates are subjected to rigorous evaluations, driven in part by stringent regulatory considerations, designed to generate information concerning efficacy, side effects, proper dosage levels and a variety of other physical and chemical characteristics that are important in determining whether a drug candidate should be approved for marketing as a pharmaceutical product. Most chemical compounds that are investigated as potential drug candidates never progress into development, and most drug candidates that do advance into development never receive marketing approval. Because our investments in drug candidates are subject to considerable risks, we closely monitor the results of our discovery, research, clinical trials and nonclinical studies and frequently evaluate our drug development programs in light of new data and scientific, business and commercial insights, with the objective of balancing risk and potential. This process can result in abrupt changes in focus and priorities as new information becomes available and as we gain additional understanding of our ongoing programs and potential new programs, as well as those of our competitors.

If we believe that data from a completed registration program support approval of a drug candidate, we submit an NDA to the FDA requesting approval to market the drug candidate in the United States and seek analogous approvals from comparable regulatory authorities in jurisdictions outside the United States. To obtain approval, we must, among other things, demonstrate with evidence gathered in nonclinical studies and well-controlled clinical trials that the drug candidate is safe and effective for the disease it is intended to treat and that the manufacturing facilities, processes and controls for the manufacture of the drug candidate are adequate. The FDA and ex-U.S. regulatory authorities have substantial discretion in deciding whether or not a drug candidate should be granted approval based on the benefits and risks of the drug candidate in the treatment of a particular disease, and could delay, limit or deny regulatory approval. If regulatory delays are significant or regulatory approval is limited or denied altogether, our financial results and the commercial prospects for the drug candidate involved will be harmed.

Regulatory Compliance

Our marketing of pharmaceutical products is subject to extensive and complex laws and regulations. We have a corporate compliance program designed to actively identify, prevent and mitigate risk through the implementation of compliance policies and systems and through the promotion of a culture of compliance. Among other laws, regulations and standards, we are subject to various U.S. federal and state laws, and comparable laws in other jurisdictions, pertaining to health care fraud and abuse, including anti-kickback and false claims laws, and laws prohibiting the promotion of drugs for unapproved or off-label uses. Anti-kickback laws make it illegal for a prescription drug manufacturer to solicit, offer, receive or pay any remuneration to induce the referral of business, including the purchase or prescription of a particular drug that is reimbursed by a state or federal program. False claims laws prohibit anyone from knowingly or willfully presenting for payment to third-party payors, including Medicare and Medicaid, claims for reimbursed drugs or services that are false or fraudulent, claims for items or services not provided as claimed, or claims for medically unnecessary items or services. We are subject to laws and regulations that regulate the sales and marketing practices of pharmaceutical manufacturers, as well as laws such as the U.S. Foreign Corrupt Practices Act, which govern our international business practices with respect to payments to government officials. We expect to continue to devote substantial resources to maintain, administer and expand these compliance programs globally.

Reimbursement

Sales of our products depend, to a large degree, on the extent to which our products are reimbursed by third-party payors, such as government health programs, commercial insurance and managed health care organizations. We dedicate substantial management and other resources in order to obtain and maintain appropriate levels of reimbursement for our products from third-party payors, including governmental organizations in the United States and ex-U.S. markets.

In the United States, we have worked successfully with third party payors in order to promptly obtain appropriate levels of reimbursement for our CF medicines and as such, more than 95% of patients across the U.S. have access to our medicines. We continue to engage in discussions with numerous commercial insurers and managed health care organizations, along with government health programs that are typically managed by authorities in the individual states, to ensure that payors recognize the significant benefits that our medicines provide by treating the underlying cause of cystic fibrosis and continue to provide access to our current medicines.

In Europe and other ex-U.S. markets, we seek government reimbursement for our medicines on a country-by-country basis. This is necessary for each new medicine, as well as label expansions for our current medicines in most countries. We successfully obtained reimbursement for KALYDECO in each significant ex-U.S. market within two years of approval. We are experiencing significant challenges in obtaining reimbursement for ORKAMBI in certain ex-U.S. markets. Specifically,

we have been discussing potential reimbursement for ORKAMBI in England and France, which represent significant potential markets for our CF medicines, since its approval in 2015. In other ex-U.S. markets, including Australia, Denmark, Germany, Ireland, Sweden and Italy, we have reached pricing and reimbursement agreements for ORKAMBI. In some of these countries we have innovative reimbursement arrangements that provide a pathway to access and rapid reimbursement for certain future CF medicines, including arrangements in Ireland, Denmark and Australia. SYMKEVI, which was approved in the European Union in the fourth quarter of 2018, is available in certain European countries, including Germany, Denmark and Ireland.

Strategic Transactions

In-License Agreements

We have entered into collaborations with biotechnology and pharmaceutical companies in order to acquire rights or to license drug candidates or technologies that enhance our pipeline and/or our research capabilities. Over the last several years, we entered into collaboration agreements with:

- CRISPR Therapeutics AG and its affiliates, or CRISPR, pursuant to which we have been collaborating since 2015 on the discovery and development of potential new treatments aimed at the underlying genetic causes of human diseases using CRISPR-Cas9 gene-editing technology. In the third quarter of 2019, we obtained the exclusive worldwide rights to CRISPR's intellectual property for DMD and DM1 gene-editing products through a new agreement with CRISPR.
- Kymera Therapeutics, or Kymera, pursuant to which we are looking to advance small molecule protein degraders against multiple targets.
- Arbor Biotechnologies, Inc., or Arbor, pursuant to which we are collaborating on the discovery of novel proteins, including DNA endonucleases, to advance the development of new gene-editing therapies.

Generally, when we in-license a technology or drug candidate, we make upfront payments to the collaborator, assume the costs of the program and agree to make contingent payments, which could consist of milestone, royalty and option payments. Most of these collaboration payments are expensed as research and development expenses; however, depending on many factors, including the structure of the collaboration, the significance of the drug candidate that we license to the collaborator's operations and the other activities in which our collaborators are engaged, the accounting for these transactions can vary significantly.

Certain of our collaborators, including BioAxone Biosciences, Inc., or BioAxone, have historically been accounted for as variable interest entities, or VIEs, and historically have been included in our consolidated financial statements due to: (i) the significance of the respective licensed programs to our collaborator as a whole, (ii) our power to control the significant activities of the entities under each collaboration, and (iii) our obligation to absorb losses and right to receive benefits that potentially could have been significant. In the fourth quarter of 2018, we determined that the above conditions were no longer satisfied with respect to BioAxone. As a result, we deconsolidated BioAxone from our consolidated financial statements.

In periods in which we have consolidated VIEs, we have evaluated the fair value of the contingent payments payable by us on a quarterly basis. Changes in the fair value of these contingent future payments affected net income attributable to Vertex on a dollar-for-dollar basis, with increases in the fair value of contingent payments payable by us to a VIE resulting in a decrease in net income attributable to Vertex (or an increase in net loss attributable to Vertex) and decreases in the fair value of contingent payments payable by us to a VIE resulting in an increase in net income attributable to Vertex (or decrease in net loss attributable to Vertex). For additional information regarding our VIEs see Note C, "Collaborative Arrangements and Acquisitions," and our critical accounting policies in our 2018 Annual Report on Form 10-K.

Acquisitions

We have acquired assets or entities in order to acquire drug candidates or technologies that enhance our pipeline and/or our research capabilities. In the third quarter of 2019, we acquired Exonics Therapeutics, or Exonics, a privately-held company focused on creating gene-editing therapies to repair mutations that cause DMD and other severe neuromuscular diseases, including DM1.

Out-License Agreements

We also have out-licensed internally developed programs to collaborators who are leading the development of these programs. These out-license arrangements include our collaboration agreements with:

- Janssen Pharmaceuticals, Inc., or Janssen, which is evaluating pimodivir in Phase 3 clinical trials for the treatment of influenza; and
- Merck KGaA, Darmstadt, Germany, which licensed oncology research and development programs from us in early 2017.

Pursuant to these out-licensing arrangements, our collaborators are responsible for the research, development and commercialization costs associated with these programs, and we are entitled to receive contingent milestone and/or royalty payments. As a result, we do not expect to incur significant expenses in connection with these programs and have the potential for future collaborative and royalty revenues resulting from these programs.

Strategic Investments

In connection with our business development activities, we have periodically made equity investments in our collaborators. As of June 30, 2019 and December 31, 2018, we held strategic equity investments in CRISPR and Moderna, both public companies, as well as certain private companies, and we may make additional strategic equity investments in the future. While we invest the majority of our cash, cash equivalents and marketable securities in instruments that meet specific credit quality standards and limit our exposure to any one issue or type of instrument, our strategic investments are maintained and managed separately from our other cash, cash equivalents and marketable securities. Any changes in the fair value of equity investments with readily determinable fair values (including publicly traded securities such as CRISPR and Moderna) are recorded to other income (expense), net in our condensed consolidated statement of operations. For equity investments without readily determinable fair values (including private equity investments), each reporting period we are required to re-evaluate the carrying value of the investment, which may result in other income (expense).

In the first half of 2019 and 2018, we recorded within other income (expense), unrealized gains of $100.1 million and $149.4 million, respectively, related to increases in the fair value of our strategic investments, which were included in our net income attributable to Vertex. To the extent that we continue to hold strategic investments, particularly strategic investments in publicly traded companies, we will record other income (expense) related to these strategic investments on a quarterly basis. Due to the high volatility of stocks in the biotechnology industry, we expect the value of these strategic investments to fluctuate and that the increases or decreases in the fair value of these strategic investments will continue to have material impacts on our net income (expense) and our profitability on a quarterly and/or annual basis.

RESULTS OF OPERATIONS

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
Revenues	$ 941,293	$ 752,157	$ 189,136	25%	$ 1,799,728	$ 1,392,956	$ 406,772	29 %
Operating costs and expenses	671,333	579,279	92,054	16%	1,252,960	1,091,177	161,783	15 %
Other non-operating income, net	57,178	44,823	12,355	28%	100,535	113,526	(12,991)	(11)%
Provision for (benefit from) income taxes	59,711	10,341	**	**	111,245	(2,318)	**	**
Net income attributable to Vertex	$ 267,427	$ 207,360	$ 60,067	29%	$ 536,058	$ 417,623	$ 118,435	28 %
Net income per diluted share attributable to Vertex common shareholders	$ 1.03	$ 0.80			$ 2.06	$ 1.61		
Diluted shares used in per share calculations	259,822	258,584			260,015	258,557		

** Not meaningful

Net Income Attributable to Vertex

Net income attributable to Vertex was $267.4 million in the second quarter of 2019 as compared to net income attributable to Vertex of $207.4 million in the second quarter of 2018. Our total revenues increased in the second quarter of 2019 as compared to the second quarter of 2018 due to a $190.5 million increase in net product revenues. The increase in operating costs and expenses in the second quarter of 2019 as compared to the second quarter of 2018 was due to increased cost of sales associated with our increasing net product revenues and expenses related to a $50.0 million upfront payment we made in the second quarter of 2019 pursuant to our collaboration agreement with Kymera, which is included in research expenses.

Net income attributable to Vertex was $536.1 million in the first half of 2019 as compared to net income attributable to Vertex of $417.6 million in the first half of 2018. Our total revenues increased in the first half of 2019 as compared to the first half of 2018 due to a $410.0 million increase in net product revenues. The increase in operating costs and expenses in the first half of 2019 as compared to the first half of 2018 was primarily due to increased cost of sales associated with our increasing net product revenues, expenses related to a $50.0 million upfront payment we made in the second quarter of 2019 pursuant to our collaboration agreement with Kymera, which is included in research expenses, and increases in our sales, general and administrative expenses.

Other non-operating income, net in the second quarter and first half of 2019 and the second quarter and first half of 2018 primarily related to total unrealized gains associated with increases in the fair value of our strategic investments.

In the first quarter of 2019, we began recording a provision for income taxes based primarily on our pre-tax income using an estimated effective tax rate that approximates statutory rates resulting in a provision for income taxes of $59.7 million and $111.2 million for the second quarter and first half of 2019, respectively. Due to our ability to offset our pre-tax income against previously benefited net operating losses, the majority of our tax provision in 2019 is a non-cash expense. In the second quarter and first half of 2018, we did not record a similar provision for income taxes based on our pre-tax income because we did not release our tax valuation allowance until the fourth quarter of 2018.

Earnings Per Share

Diluted net income per share attributable to Vertex common shareholders was $1.03 in the second quarter of 2019 as compared to diluted net income per share attributable to Vertex common shareholders of $0.80 in the second quarter of 2018.

Diluted net income per share attributable to Vertex common shareholders was $2.06 in the first half of 2019 as compared to diluted net income per share attributable to Vertex common shareholders of $1.61 in the first half of 2018.

Revenues

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
Product revenues, net	$ 940,380	$ 749,912	$ 190,468	25 %	$ 1,797,633	$ 1,387,641	$ 409,992	30 %
Collaborative and royalty revenues	913	2,245	(1,332)	(59)%	2,095	5,315	(3,220)	(61)%
Total revenues	$ 941,293	$ 752,157	$ 189,136	25 %	$ 1,799,728	$ 1,392,956	$ 406,772	29 %

Product Revenues, Net

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
SYMDEKO/SYMKEVI	$ 361,832	$ 185,558	$ 176,274	95%	$ 682,107	$ 219,682	$ 462,425	210 %
ORKAMBI	316,441	311,261	5,180	2%	609,448	665,327	(55,879)	(8)%
KALYDECO	262,107	253,093	9,014	4%	506,078	502,632	3,446	1 %
Total product revenues, net	$ 940,380	$ 749,912	$ 190,468	25%	$ 1,797,633	$ 1,387,641	$ 409,992	30 %

In the second quarter and first half of 2019, our net product revenues increased by $190.5 million and $410.0 million, respectively, as compared to the second quarter and first half of 2018. The increase in net product revenues was primarily due to the increasing number of patients being treated with SYMDEKO/SYMKEVI in both the United States and European Union. The growth of our net product revenues is dependent on, if, and when, we obtain additional reimbursement agreements for our medicines in ex-U.S. markets, particularly in the United Kingdom and France, and if we obtain additional regulatory approvals, including, in particular, potential approval for the triple combination of VX-445 (elexacaftor), tezacaftor and ivacaftor.

SYMDEKO/SYMKEVI

SYMDEKO/SYMKEVI net product revenues were $361.8 million and $682.1 million in the second quarter and first half of 2019, respectively, as compared to $185.6 million and $219.7 million in the second quarter and first half of 2018, respectively. SYMDEKO was approved by the FDA in February 2018 and SYMKEVI was approved in the European Union in November 2018. In the second quarter and first half of 2019, SYMDEKO/SYMKEVI net product revenues were $46.1 million and $77.7 million, respectively, in ex-U.S. markets. We expect SYMDEKO/SYMKEVI net product revenues to continue to increase for the remainder of 2019.

ORKAMBI

We have continued to increase the number patients eligible for ORKAMBI through label expansions and additional ex-U.S. reimbursement arrangements. These increases in eligible patients have partially offset the negative effect on ORKAMBI net product revenues resulting from a portion of the patients who were being treated with ORKAMBI switching to SYMDEKO/SYMKEVI. Due primarily to patients switching from ORKAMBI to SYMDEKO in the United States, ORKAMBI net product revenues decreased by 8% in the first half of 2019 as compared to the first half of 2018. In the second quarter and first half of 2019, ORKAMBI net product revenues were $316.4 million and $609.4 million, respectively, including $98.3 million and $189.5 million, respectively, of net product revenues from ex-U.S. markets, compared to ORKAMBI net product revenues of $311.3 million and $665.3 million in the second quarter and first half of 2018, respectively, including $75.7 million and $147.5 million, respectively, of net product revenues from ex-U.S. markets. We have received significant cash and recognized limited net product revenues to date on sales of ORKAMBI supplied under early access programs in France due to ongoing pricing discussions regarding the reimbursement rate for ORKAMBI. Please refer to Note B, “Revenue Recognition,” for a discussion of our accounting treatment for our early access program for ORKAMBI in France.

KALYDECO

In the second quarter and first half of 2019, KALYDECO net product revenues were $262.1 million and $506.1 million, respectively, including $96.3 million and $190.9 million, respectively, of net product revenues from ex-U.S. markets, compared to KALYDECO net product revenues of $253.1 million and $502.6 million in the second quarter and first half of 2018, respectively, including $91.6 million and $177.8 million, respectively, of net product revenues from ex-U.S. markets. KALYDECO net product revenues were similar in the second quarter and first half of 2019 to the second quarter and first half

of 2018 due to additional patients being treated with KALYDECO as we completed reimbursement discussions in various ex-U.S. jurisdictions and increased the number of patients eligible to receive KALYDECO through label expansions, offset by a portion of the patients who were being treated with KALYDECO switching to SYMDEKO in the United States.

Collaborative and Royalty Revenues

Our collaborative and royalty revenues were $0.9 million and $2.1 million in the second quarter and first half of 2019, respectively, as compared to $2.2 million and $5.3 million in the second quarter and first half of 2018, respectively. Our collaborative revenues have historically fluctuated significantly from one period to another and may continue to fluctuate in the future. Our future royalty revenues will be dependent on if, and when, our collaborators, including Janssen and Merck KGaA, Darmstadt, Germany are able to successfully develop drug candidates that we have out-licensed to them.

Operating Costs and Expenses

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
Cost of sales	$ 135,740	$ 104,382	$ 31,358	30%	$ 230,832	$ 175,995	$ 54,837	31%
Research and development expenses	379,091	337,532	41,559	12%	718,581	648,085	70,496	11%
Sales, general and administrative expenses	156,502	137,303	19,199	14%	303,547	267,111	36,436	14%
Restructuring expense (income)	—	62	(62)	**	—	(14)	14	**
Total costs and expenses	$ 671,333	$ 579,279	$ 92,054	16%	$ 1,252,960	$ 1,091,177	$ 161,783	15%

** Not Meaningful

Cost of Sales

Our cost of sales primarily consists of the cost of producing inventories that corresponded to product revenues for the reporting period, plus the third-party royalties payable on our net sales of our products. Pursuant to our agreement with the CFF, our tiered third-party royalties on sales of SYMDEKO/SYMKEVI, ORKAMBI and KALYDECO, calculated as a percentage of net sales, range from the single digits to the sub-teens. As a result of the tiered royalty rate, which resets annually, our cost of sales as a percentage of net product revenues are lower at the beginning of each calendar year.

Over the last several years, our cost of sales has been increasing primarily due to increased net product revenues. Our cost of sales as a percentage of our net product revenues was approximately 14% in each of the second quarter of 2018 and 2019. Our cost of sales as a percentage of our net product revenues was approximately 13% in each of the first half of 2018 and 2019. In the second half of 2019, we expect our total cost of sales to be similar to our cost of sales as a percentage of total net product revenues in the second quarter of 2019.

Research and Development Expenses

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
Research expenses	$ 144,628	$ 86,013	$ 58,615	68 %	$ 235,091	$ 163,955	$ 71,136	43 %
Development expenses	234,463	251,519	(17,056)	(7)%	483,490	484,130	(640)	— %
Total research and development expenses	$ 379,091	$ 337,532	$ 41,559	12 %	$ 718,581	$ 648,085	$ 70,496	11 %

Our research and development expenses include internal and external costs incurred for research and development of our drugs and drug candidates and expenses related to certain technology that we acquire or license through business development transactions. We do not assign our internal costs, such as salary and benefits, stock-based compensation expense, laboratory supplies and other direct expenses and infrastructure costs, to individual drugs or drug candidates, because the employees within our research and development groups typically are deployed across multiple research and development programs. These internal costs are significantly greater than our external costs, such as the costs of services provided to us by clinical research organizations and other outsourced research, which we allocate by individual program. All research and development costs for our drugs and drug candidates are expensed as incurred.

Since January 2017, we have incurred approximately $3.5 billion in research and development expenses associated with drug discovery and development. The successful development of our drug candidates is highly uncertain and subject to a number of risks. In addition, the duration of clinical trials may vary substantially according to the type, complexity and novelty of the drug candidate and the disease indication being targeted. The FDA and comparable agencies in foreign countries impose substantial requirements on the introduction of therapeutic pharmaceutical products, typically requiring lengthy and detailed laboratory and clinical testing procedures, sampling activities and other costly and time-consuming procedures. Data obtained from nonclinical and clinical activities at any step in the testing process may be adverse and lead to discontinuation or redirection of development activities. Data obtained from these activities also are susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The duration and cost of discovery, nonclinical studies and clinical trials may vary significantly over the life of a project and are difficult to predict. Therefore, accurate and meaningful estimates of the ultimate costs to bring our drug candidates to market are not available.

In 2018 and the first half of 2019, costs related to our CF programs represented the largest portion of our development costs. Any estimates regarding development and regulatory timelines for our drug candidates are highly subjective and subject to change. Until we have data from Phase 3 clinical trials, we cannot make a meaningful estimate regarding when, or if, a clinical development program will generate revenues and cash flows. We submitted an NDA to the FDA for the triple combination of elexacaftor, tezacaftor and ivacaftor in the third quarter of 2019 and we plan to submit an MAA to the EMA in the fourth quarter of 2019 for this triple combination.

Research Expenses

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
Research Expenses:								
Salary and benefits	$ 22,498	$ 21,245	$ 1,253	6%	$ 46,877	$ 45,333	$ 1,544	3%
Stock-based compensation expense	17,138	16,281	857	5%	34,673	31,041	3,632	12%
Outsourced services and other direct expenses	27,622	25,048	2,574	10%	50,986	43,861	7,125	16%
Collaboration and asset acquisition payments	52,200	2,251	49,949	**	52,200	2,559	49,641	**
Infrastructure costs	25,170	21,188	3,982	19%	50,355	41,161	9,194	22%
Total research expenses	$ 144,628	$ 86,013	$ 58,615	68%	$ 235,091	$ 163,955	$ 71,136	43%

** Not meaningful

We expect to continue to invest in our research programs with a focus on identifying drug candidates with the goal of creating transformative medicines for serious diseases. Our research expenses increased by 68% in the second quarter of 2019 as compared to the second quarter of 2018 and increased by 43% in the first half of 2019 as compared to the first half of 2018, primarily as a result of a $50.0 million upfront payment to Kymera in the second quarter of 2019, as well as expenses related to additional headcount in our research organization and increased infrastructure costs. Our research expenses have been affected, and are expected to continue to be affected, by research expenses associated with our business development activities. We completed the expansion of our collaboration with CRISPR related to DMD and DM1 in July 2019, and we expect to incur $175.0 million of research expenses associated with this collaboration in the third quarter of 2019.

Development Expenses

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)							
Development Expenses:								
Salary and benefits	$ 58,195	$ 53,789	$ 4,406	8 %	$ 118,702	$ 110,791	$ 7,911	7 %
Stock-based compensation expense	38,494	35,331	3,163	9 %	80,674	69,059	11,615	17 %
Outsourced services and other direct expenses	88,255	115,498	(27,243)	(24)%	178,129	214,690	(36,561)	(17)%
Collaboration and asset acquisition payments	190	—	190	**	5,440	250	5,190	**
Drug supply costs	5,446	11,292	(5,846)	(52)%	13,340	19,713	(6,373)	(32)%
Infrastructure costs	43,883	35,609	8,274	23 %	87,205	69,627	17,578	25 %
Total development expenses	$ 234,463	$ 251,519	$ (17,056)	(7)%	$ 483,490	$ 484,130	$ (640)	— %

** Not meaningful

Our development expenses decreased by 7% in the second quarter of 2019 as compared to the second quarter of 2018 and were similar in the first half of 2019 and the first half of 2018, primarily due to decreases in expenses related to our CF programs offset by increased headcount to support our advancing pipeline and increased infrastructure costs.

Sales, General and Administrative Expenses

	Three Months Ended June 30,		Increase/(Decrease)		Six Months Ended June 30,		Increase/(Decrease)	
	2019	2018	$	%	2019	2018	$	%
	(in thousands)				(in thousands)			
Sales, general and administrative expenses	$ 156,502	$ 137,303	$ 19,199	14%	$ 303,547	$ 267,111	$ 36,436	14%

Sales, general and administrative expenses increased by 14% in the second quarter of 2019 as compared to the second quarter of 2018 and increased by 14% in the first half of 2019 as compared to the first half of 2018, primarily due to increased global support for our medicines and incremental investment to support the potential launch of our triple combination regimen.

Other Non-Operating Income, Net

Interest Income

Interest income was $18.1 million and $33.7 million in the second quarter and first half of 2019, respectively, compared to $8.0 million and $13.8 million in the second quarter and first half of 2018, respectively. The increase in interest income in the second quarter and first half of 2019 as compared to the second quarter and first half of 2018 was primarily due to an increase in our cash equivalents and marketable securities and prevailing market interest rates. Our future interest income will be dependent on the amount of, and prevailing market interest rates on, our outstanding cash equivalents and marketable securities.

Interest Expense

Interest expense was $14.8 million and $29.7 million in the second quarter and first half of 2019, respectively, compared to $18.2 million and $35.0 million in the second quarter and first half of 2018, respectively. The majority of our interest expense in these periods was related to imputed interest expense associated with our leased corporate headquarters in Boston and our research site in San Diego. On January 1, 2019, we adopted ASC 842, *Leases*, which resulted in a reduction in our imputed interest expense associated with these leases in the second quarter and first half of 2019 as compared to the second quarter and first half of 2018. We expect similar reductions in our imputed interest expense associated with these leases in the initial years subsequent to the adoption of this accounting guidance as compared to the amounts that were recorded in accordance with the previously applicable guidance. In addition to the updated accounting guidance, our future interest expense will also be dependent on whether, and to what extent, we reborrow amounts under our credit facility.

Other Income, Net

Other income, net was $53.9 million and $96.5 million in the second quarter and first half of 2019, respectively, compared to $53.8 million and $150.7 million in the second quarter and first half of 2018, respectively. Our other income in these periods is primarily related to increases in the fair value of our strategic investments. The value of these strategic investments has fluctuated significantly in the past, including decreasing significantly in the second half of 2018. In future periods, we expect our other income (expense), net to fluctuate based on increases or decreases in the fair value of our strategic investments.

Noncontrolling Interest

The net income attributable to noncontrolling interest recorded on our condensed consolidated statements of operations reflects our VIE's net (income) loss for the reporting period adjusted for any changes in the noncontrolling interest holders' claim to net assets, including contingent milestone, royalty and option payments.

As of December 31, 2018, we deconsolidated BioAxone and had no noncontrolling interest in the second quarter and first half of 2019 as a result. In the second quarter and first half of 2018, we recorded a net loss attributable to noncontrolling interest of $1.1 million and net income attributable to noncontrolling interest of $15.9 million, respectively. The net income attributable to noncontrolling interest for the first half of 2018 was primarily related to a $24.0 million increase in the fair value of the contingent payments payable by us to BioAxone partially offset by an associated benefit from income taxes in the first quarter of 2018. The increase in the fair value of contingent payments was primarily due to the expiration of an option held by us to purchase BioAxone that resulted in our election to continue our license for VX-210, which increased the probability that additional milestone and royalty payments related to the license for VX-210 would be paid.

Income Taxes

In the second quarter of 2019, we recorded a provision for income taxes of $59.7 million as compared to a provision for income taxes of $10.3 million in the second quarter of 2018. In the first half of 2019, we recorded a provision for income taxes of $111.2 million as compared to a benefit from income taxes of $2.3 million in the first half of 2018. Our effective tax rate for the first half of 2019 is lower than the U.S. statutory rate primarily due to excess tax benefits related to stock-based compensation and utilization of net operating losses to offset pre-tax operating income. The change in our provision for income taxes in the first half of 2019 compared to the first half of 2018 was primarily due to the release of our valuation allowance on the majority of our net operating losses and other deferred tax assets in the fourth quarter of 2018. Starting in 2019, we began recording a provision for income taxes on our pre-tax income using an estimated effective tax rate that approximates statutory rates. Due to our ability to offset our pre-tax income against previously benefited net operating losses, we expect the majority of our tax provision to represent a non-cash expense until our net operating losses have been fully utilized.

The provision for income taxes in the second quarter of 2018 and benefit from income taxes for the first half of 2018 primarily related to excess tax benefits associated with stock-based compensation, a provision for income taxes attributable to noncontrolling interest and our U.S. state and foreign taxes.

LIQUIDITY AND CAPITAL RESOURCES

The following table summarizes the components of our financial condition as of June 30, 2019 and December 31, 2018:

	June 30, 2019	December 31, 2018	Increase/(Decrease) $	Increase/(Decrease) %
	(in thousands)			
Cash, cash equivalents and marketable securities	$ 3,951,222	$ 3,168,242	$ 782,980	25%
Working Capital				
Total current assets	4,710,968	3,843,109	867,859	23%
Total current liabilities	(1,259,220)	(1,120,292)	138,928	12%
Total working capital	$ 3,451,748	$ 2,722,817	$ 728,931	27%

As of June 30, 2019, total working capital was $3.5 billion, which represented an increase of $729 million from $2.7 billion as of December 31, 2018. The most significant items that increased total working capital in the first half of 2019 were $788.5 million of cash provided by operations, a $100.1 million increase in the fair value of our strategic investments and $114.1 million of cash received from issuances of common stock under our employee benefit plans partially offset by $155.8 million of cash used to repurchase shares of our common stock and expenditures for property and equipment of $34.4 million.

Sources of Liquidity

As of June 30, 2019, we had cash, cash equivalents and marketable securities of $4.0 billion, which represented an increase of $783 million from $3.2 billion as of December 31, 2018. We intend to rely on our existing cash, cash equivalents and marketable securities together with cash flows from product sales as our primary source of liquidity. We are receiving cash flows from sales of SYMDEKO/SYMKEVI, ORKAMBI and KALYDECO. Future cash flows will be dependent on, among other things, the timing of and our ability to complete reimbursement discussions in certain European countries and, if and when, we obtain approval for a triple combination regimen.

We may borrow up to $500.0 million pursuant to a revolving credit facility that we entered into in 2016. We may repay and reborrow amounts under the revolving credit agreement without penalty. Subject to certain conditions, we may request that the borrowing capacity under this credit agreement be increased by an additional $300.0 million.

In the first half of 2019, we received significant proceeds from the issuance of common stock under our employee benefit plans, but the amount and timing of future proceeds from employee benefits plans is uncertain. Since the beginning of 2018, the value of our strategic investment in CRISPR has fluctuated significantly on a quarterly basis. The future value of our strategic investments, including our investments in CRISPR and Moderna, is uncertain. Other possible sources of future liquidity include strategic collaborative agreements that include research and/or development funding, commercial debt, public and private offerings of our equity and debt securities, development milestones and royalties on sales of products, software and equipment leases, strategic sales of assets or businesses and financial transactions. Negative covenants in our credit agreement may prohibit or limit our ability to access these sources of liquidity.

Future Capital Requirements

We have significant future capital requirements, including:

- significant expected operating expenses to conduct research and development activities and to operate our organization; and
- substantial facility and capital lease obligations, including leases for two buildings in Boston, Massachusetts that continue through 2028 and a lease in San Diego, California that continues through 2034.

In addition,

- Once we conclude our ongoing pricing discussions with the French government, we expect we will be required to repay a portion of the amounts we have collected under ORKAMBI early access programs in France to the French government based on the difference between the invoiced price of ORKAMBI and the final price for ORKAMBI in France.
- We have entered into certain collaboration agreements with third parties that include the funding of certain research, development and commercialization efforts with the potential for future milestone and royalty payments by us upon the achievement of pre-established developmental and regulatory targets and/or commercial targets, and we may enter into additional business development transactions, including acquisitions, collaborations and equity investments, that require additional capital.
- In June 2019, we entered into the collaboration agreement with CRISPR for DMD and DM1 and we entered into the agreement to acquire Exonics. In July 2019, in connection with the closings of these transactions, we paid CRISPR a $175.0 million upfront payment and we paid Exonics' equity holders approximately $245.0 million.
- To the extent we borrow amounts under the credit agreement we entered into in October 2016, we would be required to repay any outstanding principal amounts in 2021.

In January 2018, we announced a share repurchase program to repurchase up to $500.0 million of shares of our common stock through December 31, 2019. As of June 30, 2019, we had repurchased the entire $500.0 million of our common stock that was authorized under share repurchase program. In July 2019, we announced a new share repurchase program, pursuant to which we are authorized to repurchase up to $500.0 million of our common stock between August 1, 2019 and December 31, 2020.

We expect that cash flows from our products together with our current cash, cash equivalents and marketable securities will be sufficient to fund our operations for at least the next twelve months. The adequacy of our available funds to meet our future operating and capital requirements will depend on many factors, including the amounts of future revenues generated by products, and the potential introduction of one or more of our other drug candidates to the market, including a triple combination regimen for patients with CF, the level of our business development activities and the number, breadth, cost and prospects of our research and development programs.

Financing Strategy

We may raise additional capital by borrowing under credit agreements, through public offerings or private placements of our securities or securing new collaborative agreements or other methods of financing. We will continue to manage our capital structure and will consider all financing opportunities, whenever they may occur, that could strengthen our long-term liquidity profile. There can be no assurance that any such financing opportunities will be available on acceptable terms, if at all.

CONTRACTUAL COMMITMENTS AND OBLIGATIONS

Our commitments and obligations were reported in our Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the Securities and Exchange Commission, or SEC, on February 13, 2019. There have been no material changes from the contractual commitments and obligations previously disclosed in that Annual Report on Form 10-K other than (i) additional potential future milestone and royalty payments upon the achievement of pre-established developmental and regulatory targets and/or commercial targets pursuant to business development transactions that we entered into in the first half of 2019 and (ii) an aggregate of approximately $420.0 million in payments we made to CRISPR and shareholders of Exonics in connection with business development transactions that closed in July 2019.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our discussion and analysis of our financial condition and results of operations is based upon our condensed consolidated financial statements prepared in accordance with generally accepted accounting principles in the United States. The preparation of these financial statements requires us to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of revenues and expenses during the reported periods. These items are monitored and analyzed by management for changes in facts and circumstances, and material changes in these estimates could occur in the future. Changes in estimates are reflected in reported results for the period in which the change occurs. We base our estimates on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Actual results may differ from our estimates if past experience or other assumptions do not turn out to be substantially accurate. During the six months ended June 30, 2019, there were no material changes to our critical accounting policies as reported in our Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on February 13, 2019.

RECENT ACCOUNTING PRONOUNCEMENTS

For a discussion of recent accounting pronouncements, please refer to Note A, “Basis of Presentation and Accounting Policies.”

Item 3. Quantitative and Qualitative Disclosures About Market Risk

As part of our investment portfolio, we own financial instruments that are sensitive to market risks. The investment portfolio is used to preserve our capital until it is required to fund operations, including our research and development activities. None of these market risk-sensitive instruments are held for trading purposes. We do not have derivative financial instruments in our investment portfolio.

Interest Rate Risk

We invest our cash in a variety of financial instruments, principally securities issued by the U.S. government and its agencies, investment-grade corporate bonds and commercial paper, and money market funds. These investments are denominated in U.S. Dollars. All of our interest-bearing securities are subject to interest rate risk and could decline in value if interest rates fluctuate. Substantially all of our investment portfolio consists of marketable securities with active secondary

or resale markets to help ensure portfolio liquidity, and we have implemented guidelines limiting the term-to-maturity of our investment instruments. Due to the conservative nature of these instruments, we do not believe that we have a material exposure to interest rate risk. If interest rates were to increase or decrease by 1%, the fair value of our investment portfolio would increase or decrease by an immaterial amount.

In 2016, we entered into a credit agreement. Loans under the credit agreement bear interest, at our option, at either a base rate or a Eurodollar rate, in each case plus an applicable margin. The applicable margin on base rate loans ranges from 0.75% to 1.50% and the applicable margin on Eurodollar loans ranges from 1.75% to 2.50%, in each case, based on our consolidated leverage ratio (as defined in the credit agreement). We do not believe that changes in interest rates related to the credit agreement would have a material effect on our financial statements. As of June 30, 2019, we had no principal or interest outstanding. A portion of our "Interest expense" in 2019 will be dependent on whether, and to what extent, we reborrow amounts under the existing facility.

Foreign Exchange Market Risk

As a result of our foreign operations, we face exposure to movements in foreign currency exchange rates, primarily the Euro and British Pound against the U.S. Dollar. The current exposures arise primarily from cash, accounts receivable, intercompany receivables and payables, payables and accruals and inventories. Both positive and negative effects to our net revenues from international product sales from movements in exchange rates are partially mitigated by the natural, opposite effect that exchange rates have on our international operating costs and expenses.

We have a foreign currency management program with the objective of reducing the effect of exchange rate fluctuations on our operating results and forecasted revenues and expenses denominated in foreign currencies. We currently have cash flow hedges for the Euro, British Pound, Canadian Dollar and Australian Dollar related to a portion of our forecasted product revenues that qualify for hedge accounting treatment under U.S. GAAP. We do not seek hedge accounting treatment for our foreign currency forward contracts related to monetary assets and liabilities that impact our operating results. As of June 30, 2019, we held foreign exchange forward contracts that were designated as cash flow hedges with notional amounts totaling $639.0 million and had a net fair value of $12.6 million recorded on our condensed consolidated balance sheet.

Although not predictive in nature, we believe a hypothetical 10% threshold reflects a reasonably possible near-term change in exchange rates. Assuming that the June 30, 2019 exchange rates were to change by a hypothetical 10%, the fair value recorded on our condensed consolidated balance sheet related to our foreign exchange forward contracts that were designated as cash flow hedges as of June 30, 2019 would change by approximately $63.9 million. However, since these contracts hedge a specific portion of our forecasted product revenues denominated in certain foreign currencies, any change in the fair value of these contracts is recorded in "Accumulated other comprehensive (loss) income" on our condensed consolidated balance sheet and is reclassified to earnings in the same periods during which the underlying product revenues affect earnings. Therefore, any change in the fair value of these contracts that would result from a hypothetical 10% change in exchange rates would be entirely offset by the change in value associated with the underlying hedged product revenues resulting in no impact on our future anticipated earnings and cash flows with respect to the hedged portion of our forecasted product revenues.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our chief executive officer and chief financial officer, after evaluating the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this Quarterly Report on Form 10-Q, have concluded that, based on such evaluation, as of June 30, 2019 our disclosure controls and procedures were effective and designed to provide reasonable assurance that the information required to be disclosed is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. In designing and evaluating our disclosure controls and procedures, our management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Changes in Internal Controls Over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended) occurred during the three months ended June 30, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. Other Information

Item 1. Legal Proceedings

We are not currently subject to any material legal proceedings.

Item 1A. Risk Factors

Information regarding risk factors appears in Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on February 13, 2019. There have been no material changes from the risk factors previously disclosed in the Annual Report on Form 10-K.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q and, in particular, our Management's Discussion and Analysis of Financial Condition and Results of Operations set forth in Part I-Item 2, contain or incorporate a number of forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding:

- our expectations regarding the amount of, timing of and trends with respect to our revenues, costs and expenses and other gains and losses, including those related to net product revenues;
- our expectations regarding clinical trials, development timelines and regulatory authority filings and submissions for ivacaftor, lumacaftor, tezacaftor, elexacaftor, and the timelines for regulatory filings for our triple combination regimen;
- our ability to obtain reimbursement for our medicines in ex-U.S. markets and our ability to otherwise successfully market our medicines or any of our other drug candidates for which we obtain regulatory approval;
- our expectations regarding the timing and structure of clinical trials of our drugs and drug candidates and the expected timing of our receipt of data from our ongoing and planned clinical trials;
- the data that will be generated by ongoing and planned clinical trials and the ability to use that data to advance compounds, continue development or support regulatory filings;
- our beliefs regarding the support provided by clinical trials and preclinical and nonclinical studies of our drug candidates for further investigation, clinical trials or potential use as a treatment;
- our plan to continue investing in our research and development programs and our strategy to develop our drug candidates, alone or with third party-collaborators;
- the establishment, development and maintenance of collaborative relationships;
- potential business development activities;
- potential fluctuations in foreign currency exchange rates;
- our ability to use our research programs to identify and develop new drug candidates to address serious diseases and significant unmet medical needs; and
- our liquidity and our expectations regarding the possibility of raising additional capital.

Any or all of our forward-looking statements in this Quarterly Report on Form 10-Q may turn out to be wrong. They can be affected by inaccurate assumptions or by known or unknown risks and uncertainties. Many factors mentioned in this Quarterly Report on Form 10-Q will be important in determining future results. Consequently, no forward-looking statement

can be guaranteed. Actual future results may vary materially from expected results. We also provide a cautionary discussion of risks and uncertainties under "Risk Factors" in Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2018, which was filed with the SEC on February 13, 2019. These are factors and uncertainties that we think could cause our actual results to differ materially from expected results. Other factors and uncertainties besides those listed there could also adversely affect us.

Without limiting the foregoing, the words "believes," "anticipates," "plans," "intends," "expects" and similar expressions are intended to identify forward-looking statements. There are a number of factors and uncertainties that could cause actual events or results to differ materially from those indicated by such forward-looking statements, many of which are beyond our control. In addition, the forward-looking statements contained herein represent our estimate only as of the date of this filing and should not be relied upon as representing our estimate as of any subsequent date. While we may elect to update these forward-looking statements at some point in the future, we specifically disclaim any obligation to do so to reflect actual results, changes in assumptions or changes in other factors affecting such forward-looking statements.

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

Issuer Repurchases of Equity Securities

We had a share repurchase program (the "2018 Share Repurchase Program"), announced in January 2018, under which we were authorized to repurchase up to $500.0 million of our common stock by December 31, 2019. As of March 31, 2019, we had repurchased $448.0 million of common stock under the 2018 Share Repurchase Program and, as of June 30, 2019, had repurchased the entire $500.0 million of our common stock that was authorized under the 2018 Share Repurchase Program. The table set forth below shows repurchases of securities by us during the three months ended June 30, 2019; including shares repurchased under our 2018 Share Repurchase Program and a small number of restricted shares repurchased by us from employees pursuant to our equity programs. In July 2019, our Board of Directors approved a new share repurchase program, pursuant to which we are authorized to repurchase up to $500.0 million of our common stock between August 1, 2019 and December 31, 2020.

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (2)	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs (2)
April 1, 2019 to April 30, 2019	296,434	$175.43	295,168	$—
May 1, 2019 to May 31, 2019	2,272	$0.01	—	$—
June 1, 2019 to June 30, 2019	480	$0.01	—	$—
Total	299,186	$173.82	295,168	$—

(1) Consists of 295,168 shares repurchased pursuant to our share repurchase program (described in footnote 2 below) at an average price per share of $176.19 and 4,018 restricted shares repurchased for $0.01 per share from our employees pursuant to our equity plans. While we have restricted shares that are continuing to vest under our equity plans that are subject to repurchase rights upon termination of service, we have transitioned our equity program to granting restricted stock units. Unvested restricted stock units are forfeited upon termination of service and do not result in an issuer repurchase that would be reflected in this table.

(2) Under our share repurchase program that was completed in the second quarter of 2019 and the new share repurchase program that we established in the third quarter of 2019, we are authorized to purchase shares from time to time through open market or privately negotiated transactions and such purchases may be made pursuant to Rule 10b5-1 plans or other means as determined by our management and in accordance with the requirements of the Securities and Exchange Commission. The approximate dollar value of shares that may yet be repurchased is based solely on shares that may be repurchased under the share repurchase program and excludes any shares that may be repurchased under our employee equity programs. The preceding table does not reflect the $500 million value of shares that may be purchased under the new share repurchase program because this program was not authorized until the third quarter of 2019.

Item 6. Exhibits

Exhibit Number	Exhibit Description
10.1	Agreement and Plan of Merger, dated as of June 6, 2019, among Vertex Pharmaceuticals Incorporated, VXP Merger Sub, Inc., Exonics Therapeutics, Inc. and Shareholder Representative Services LLC, solely in its Capacity as Shareholders' Representative, as amended by the Amendment to Agreement and Plan of Merger, dated as of June 12, 2019, among Vertex Pharmaceuticals Incorporated, VXP Merger Sub, Inc., Exonics Therapeutics, Inc. and Shareholder Representative Services LLC, solely in its Capacity as Shareholders' Representative
31.1	Certification of the Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Chief Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Chief Executive Officer and the Chief Financial Officer under Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation
101.LAB	XBRL Taxonomy Extension Labels
101.PRE	XBRL Taxonomy Extension Presentation
101.DEF	XBRL Taxonomy Extension Definition

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.

Vertex Pharmaceuticals Incorporated

August 1, 2019 By: /s/ Charles F. Wagner, Jr.

Charles F. Wagner, Jr.

Executive Vice President, Chief Financial Officer
(principal financial officer and
duly authorized officer)

AGREEMENT AND PLAN OF MERGER

AMONG

VERTEX PHARMACEUTICALS INCORPORATED,

VXP MERGER SUB, INC.,

EXONICS THERAPEUTICS, INC.,

AND

SHAREHOLDER REPRESENTATIVE SERVICES LLC,

SOLELY IN ITS CAPACITY AS SHAREHOLDERS' REPRESENTATIVE

DATED AS OF JUNE 6, 2019

[*] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM IF PUBLICLY DISCLOSED.

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EXHIBITS:
Exhibit A: Working Capital Exhibit
Exhibit B: Written Consent
Exhibit C: Charter Amendment
Exhibit D: Certificate of Merger
Exhibit E: Company Compliance Certificate
Exhibit F: Buyer Compliance Certificate
Exhibit G: Restricted Activities Agreement
Exhibit H: [*] Deferred Consideration Agreement
Exhibit I: Deferred Consideration Acknowledgement
Exhibit J: Designated Individual Agreement

SCHEDULES:
Schedule I: Payment Spreadsheet
Disclosure Schedule

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AGREEMENT AND PLAN OF MERGER

This AGREEMENT AND PLAN OF MERGER (this "**Agreement**") dated as of June 6, 2019, among Vertex Pharmaceuticals Incorporated, a company incorporated under the laws of Massachusetts ("**Buyer**"), VXP Merger Sub, Inc., a Delaware corporation ("**Merger Sub**"), Exonics Therapeutics, Inc., a Delaware corporation (the "**Company**"), and Shareholder Representative Services LLC, a Colorado limited liability company, solely in its capacity as the Shareholders' Representative.

RECITALS

WHEREAS, the board of directors of Buyer, the Company and Merger Sub have each (i) determined that the merger of Merger Sub with and into the Company (the "**Merger**") on the terms and subject to the conditions set forth in this Agreement are advisable and in the best interest of their respective shareholders to consummate and (ii) approved the Merger on the terms and subject to the conditions set forth in this Agreement.

WHEREAS, following the approval of this Agreement by the Board of Directors of the Company (the "**Board of Directors**"), (a) the Company has delivered the Disclosure Statement to holders of all of the outstanding Company Capital Stock, and (b) holders of Company Capital Stock representing approximately ninety percent (90%) or more of the outstanding voting power of the Company have signed the Written Consent, which, in accordance with Section 228(c) of the DGCL, shall be effective as of immediately after the execution and delivery of this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth herein, the Parties agree as follows:

ARTICLE 1
DEFINED TERMS

The capitalized terms set forth in this ARTICLE 1 shall have the meanings set forth herein.

1.1. "**Action**" means any claim, action, cause of action or suit (whether in contract or tort or otherwise), litigation (whether at law or in equity, whether civil or criminal), assessment, arbitration, audit, investigation, hearing, charge, complaint, demand, notice or proceeding to, from, by or before any Governmental Authority.

1.2. "**Adjustment Escrow Amount**" means [*].

1.3. "**Adjustment Escrow Fund**" has the meaning set forth in Section 2.15.1.

1.4. "**Affiliate**" means, as of any point in time and for so long as such relationship continues to exist with respect to any Person, any other Person that controls, is controlled by or is under common control with such Person. A Person will be regarded as in control of another Person if it (a) owns or controls, directly or indirectly, more than 50% of the equity securities of the subject Person entitled to vote in the election of directors (or, in the case of a Person that is not a corporation, for the election of the corresponding managing authority), or (b) possesses, directly or indirectly, the power to direct or cause the direction of the management or policies of any such Person (whether through ownership of securities or other ownership interests or by contract). For purposes of clarity, (x) [*] by either of the foregoing that is not also controlled by the Company is not, and shall be deemed not to be, Affiliates of the Company for purposes of this definition of "Affiliate" and (y) [*] by either of the foregoing that is not also controlled by the Company or Buyer is not, and shall be deemed not to be, Affiliates of the Company or Buyer for purposes of this definition of "Affiliate."

1.5. "**Agreement**" has the meaning set forth in the Preamble.

1.6. "**Aggregate Payment Pro Rata Percentage**" means, with respect to a Company Holder, the quotient obtained by dividing (i) (A) the amount of the Closing Payment that is actually paid to such Company Holder in accordance with Section 2.7.3 and Section 2.8.1, which in the case of a holder of Vested Company Stock Options, shall be increased by the aggregate exercise price of all Vested Company Stock Options held by such holder that was deducted from the Closing Payment payable at Closing to such holder pursuant to Section 2.8.1(a)(II) *increased by* (B) the portion of any Contingent Payment actually paid to such Company Holder in accordance with Section 2.14 *increased by* (C) any amounts not paid to such Company Holder pursuant to the set-off rights set forth in Section 8.8 in respect of indemnity provided pursuant to Section 8.3 by (ii) (A) the total amount of the Closing Payment to all Company Holders in accordance with Section 2.7.3 and Section 2.8.1 *increased* by (B) the aggregate exercise price of all Vested Company Stock Options deducted from the Closing Payment pursuant to Section 2.8.1(a)(II) *increased* by (C) all Contingent Payments actually paid to all Company Holders in accordance with Section 2.14 *increased by* (D) any amounts not paid all Company Holders pursuant to the set-off rights set forth in Section 8.8 in respect of indemnity provided pursuant to Section 8.3.

1.7. "**Antitrust Approval**" has the meaning set forth in Section 7.3.2.

1.8. "**Applicable Law**" means all applicable constitutions, treaties, laws (including common law), statutes, ordinances, rules, regulations, interpretations, directives, Judgments, and other pronouncements of any Governmental Authority, including any

applicable rules, regulations, guidelines or other requirements of the Regulatory Authorities that may be in effect, binding and enforceable from time to time.

1.9. "**Approval Application**" means a BLA, NDA, application for accelerated approval, or similar application or submission for a Product filed with a Regulatory Authority in a country or group of countries to obtain the approvals, licenses, registrations or authorizations necessary for the commercialization of such Product in that country or group of countries, but excluding any application for Price Approval.

1.10. "**Auditor**" has the meaning set forth in Section 2.13.2.

1.11. "**Basket**" has the meaning set forth in Section 8.4.1.

1.12. "**Bayh-Dole Act**" means the Patent and Trademark Law Amendments Act of 1980, as amended, codified at 35 U.S.C. §§ 200-212, as well as any regulations promulgated pursuant thereto, including 37 C.F.R. Part 401, and any successor statutes or regulations.

1.13. "**BLA**" means a Biological License Application for a Product that is submitted to the FDA pursuant to 21 C.F.R. § 601.2.

1.14. "**Board of Directors**" has the meaning set forth in the Recitals.

1.15. "**Business**" means, with respect to any Restricted Individual, (i) the treatment of muscle diseases, including DMD and DM1 and (ii) the research, development, manufacture, commercialization and other exploitation of any gene-editing products intended for the treatment of any disease area for which Buyer or any of its Affiliates has publicly announced that it is researching, developing, manufacturing, commercializing or otherwise exploiting a gene-editing product as of the date of termination of such Restricted Individual's employment or other service providing relationship with the Buyer.

1.16. "**Business Day**" means a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in Boston, Massachusetts are authorized or obligated to close.

1.17. "**Buyer**" has the meaning set forth in the Preamble.

1.18. "**Buyer Indemnified Party**" has the meaning set forth in Section 8.2.

1.1. "**Buyer Rights Successor**" means (a) any Person to which Buyer or any Affiliate of Buyer directly or indirectly (i) assigns or otherwise transfers any equity interest in the Company or (ii) licenses, assigns or otherwise transfers any right, title or interest in (A) any Company Intellectual Property, (B) any Product or (C) any right to research, develop or commercialize any Product, (b) any Affiliate of any Person described in clause (a), (c) any Person to which any Person described in clause (a) or clause (b) directly or indirectly (through any number of tiers) licenses, assigns or otherwise transfers any such interest described in clause (a) or any other successor or assign of any Person described in clause (a) or (b) with respect to such interest described in clause (a); or (d) any Affiliate of a Person described in clause (c).

1.2. "**Buyer's Closing Date Working Capital Calculation**" has the meaning set forth in Section 2.13.1.

1.3. "**Capitalization Table**" has the meaning set forth in Section 4.4.2.

1.4. "**Capital Stock**" means any capital stock or share capital of, other voting securities of, other equity interest in, or right to receive profits, losses or distributions of, any Person.

1.5. "**CERCLA**" means the Federal Comprehensive, Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. §§ 9601 et seq.), as amended, and the rules and regulations promulgated thereunder, and any foreign and state Applicable Law counterparts.

1.6. "**Certificate**" has the meaning set forth in Section 2.7.3(b).

1.7. "**Certificate of Merger**" has the meaning set forth in Section 2.3.3.

1.8. "**cGMP**" means, with respect to any applicable jurisdiction, the then-current good manufacturing practices for the manufacture of the Products required by the applicable Regulatory Authority, including European Community Directive 91/356/EEC (principles and guidelines of good manufacturing practice for medicinal products) and the current Good Manufacturing Practice Regulations to the U.S. Code of Federal Regulations Title 21 (21 CFR Parts 210, 211, 600, 610, and 1271) and comparable regulatory standards, practices and procedures promulgated by other Regulatory Authorities, as applicable, in each case as they may be updated from time to time.

1.9. "**Change of Control**" means, with respect to a Party or its Affiliate, as applicable: (a) the sale of all or substantially all of such Party's or such Affiliate's, respectively, assets; (b) a merger, reorganization or consolidation involving such Party or such Affiliate, respectively, in which the beneficial owners of the outstanding voting securities of such Party or such Affiliate, respectively, immediately prior to such transaction have beneficial ownership of less than fifty percent (50%) of the outstanding voting securities of the surviving entity immediately after such merger, reorganization or consolidation; or (c) any transaction or series of related transactions in which any third party, together with its Affiliates, acquires the beneficial ownership of fifty percent (50%) or more of the outstanding voting securities of such Party or such Affiliate, respectively.

1.10. "**Change of Control Payments**" means, in all cases without duplication, (i) any amounts that become payable by the Company to any of its current or former officers, employees, directors or consultants as a result of or in connection with the execution and delivery of this Agreement or the consummation of the Merger, whether pursuant to any Plan or severance policy of the Company or any individual employment, severance or change-of-control Contract or otherwise (excluding any retention, severance, change in control, equity or other compensatory arrangements (including in any Offer Letter) implemented by Buyer or its Affiliates in connection with the Merger or otherwise or obligations triggered by terminations of employment following the Closing) and (ii) the employer-portion of any payroll or employment Taxes in respect of amounts included in clause (i) above and in respect of any payments made under Section 2.8.1(a) to holders of Vested Company Stock Options and under Section 2.7.3(a) to holders of Company Restricted Stock for which a valid election under Section 83(b) of the Code has not been made, and under any Designated Individual Agreement to the Designated Individuals, including, in each case, in respect of payments to the Shareholders' Representative Reserve on behalf of such holders (regardless of whether such Taxes are payable at or following the Closing), except in each case to the extent such amounts were paid prior to the Closing Date; provided, however, that Change of Control Payments do not include payments to holders of Company Stock Options or Company Restricted Stock due to their holding or ownership of Company Stock Options or Company Restricted Stock, as applicable.

1.11. "**Charter Amendment**" has the meaning set forth in Section 1.218.

1.12. "**Claims**" has the meaning set forth in Section 6.8.

1.13. "**Clinical Trial**" means a study in humans that is required to be or is otherwise conducted in accordance with GCP and is designed to generate data in support of an Approval Application.

1.14. "**Closing**" has the meaning set forth in Section 2.2.

1.15. "**Closing Date**" means the date on which the Closing occurs.

1.16. "**Closing Payment**" means (i) the Purchase Price minus (ii) the Indemnification Escrow Amount, minus (iii) the Adjustment Escrow Amount, minus (iv) Shareholders' Representative Reserve, minus (v) any Deal Fees, minus (vi) any Debt Payoff Amount, minus (vii) any Change of Control Payments, and plus or minus, as applicable, (viii) the Closing Working Capital Adjustment, if any.

1.17. "**Closing Working Capital Adjustment**" has the meaning set forth in Section 2.13.1.

1.18. "**Code**" means the Internal Revenue Code of 1986, as amended, including the rules and regulations thereunder and any substitute or successor provisions.

1.19. "**Commercially Reasonable Efforts**" means, with respect to any objective relating to the research, development or commercialization of a Product, the level, caliber and quality of efforts and resources reasonably and normally used by [*].

1.20. "**Company**" has the meaning set forth in the Preamble.

1.21. "**Company Capital Stock**" means, collectively, the Company Common Stock, the Company Restricted Stock, and the Company Preferred Stock.

1.22. "**Company Common Stock**" means common stock, $0.0001 par value per share of the Company.

1.23. "**Company Holder**" means a holder of: (i) Company Capital Stock or (ii) Vested Company Stock Options, in each case, as of immediately prior to the Effective Time (other than a holder of Dissenting Shares).

1.24. "**Company Holder Indemnified Party**" has the meaning set forth in Section 8.3.

1.25. "**Company Holder Indemnity Event**" has the meaning set forth in Section 8.2.4.

1.26. "**Company Intellectual Property**" means all Intellectual Property owned by or licensed to the Company as of the date of this Agreement, excluding (i) any commercially or otherwise generally available software or (ii) any Know-How that is generally known or available to the public as of the date of this Agreement.

1.27. "**Company knowledge**", "to the knowledge of the Company" or variations thereof means the actual knowledge, after making a reasonable inquiry of any employee of the Company who would reasonably be expected to be familiar with the matter in question, of [*].

1.28. "**Company Patent Rights**" has the meaning set forth in Section 4.14.1.

1.29. "**Company Personnel**" means any former or current director, officer, employee, independent contractor or consultant of the Company.

1.30. "**Company Preferred Stock**" means any series or class of preferred stock of the Company.

1.31. "**Company Restricted Stock**" means Company Common Stock that is subject to a substantial risk of forfeiture within the

meaning of Section 83 of the Code.

1.32. "**Company Shareholder**" means a holder of Company Capital Stock.

1.33. "**Company Stock Option**" means an option to purchase or acquire shares of Company Common Stock.

1.34. "**Company Stock Plan**" means the Company's 2017 Stock Incentive Plan.

1.35. "**Confidential Information**" means, with respect to each Party, all Know-How or other information, including proprietary information (whether or not patentable) regarding or embodying such Party's technology, products, business information or objectives, that is communicated in any way or form by or on behalf of the Disclosing Party to the Receiving Party or its permitted recipients, pursuant to this Agreement or any confidentiality agreement previously entered into by the Company and Buyer, whether or not such Know-How or other information is identified as confidential at the time of disclosure. The terms and conditions of this Agreement will be considered Confidential Information of each Party, with each Party deemed to be the Receiving Party of such Confidential Information. All information and data regarding Products generated after the date hereof will be deemed Buyer's Confidential Information at and following the Effective Time. Notwithstanding any provision of this Section 1.53 to the contrary, Confidential Information does not include any Know-How or information that: (a) was already known by the Receiving Party (other than under an obligation of confidentiality to the Disclosing Party) at the time of disclosure by or on behalf of the Disclosing Party; (b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the Receiving Party; (c) became generally available to the public or otherwise part of the public domain after its disclosure to the Receiving Party, other than through any act or omission of the Receiving Party in breach of its obligations under this Agreement; (d) was disclosed to the Receiving Party, other than under an obligation of confidentiality, by a third party who had no obligation to the Disclosing Party not to disclose such information to the Receiving Party; or (e) was independently discovered or developed by or on behalf of the Receiving Party without the use of any Confidential Information belonging to the Disclosing Party. Confidential Information disclosed to the Receiving Party hereunder will not be deemed to fall within the foregoing exceptions merely because broader or related information falls within such exceptions, nor will combinations of elements or principles be considered to fall within the foregoing exceptions merely because individual elements of such combinations fall within such exceptions.

1.36. "**Constitutive Documents**" means the articles or certificate of incorporation and by-laws of a Person if such Person is a corporation, and analogous constitutive documents if such Person is another form of entity.

1.37. "**Contingent Payment**" has the meaning set forth in Section 2.14.1.

1.38. "**Contingent Payment Deal Fees**" means all fees and expenses (including fees and expenses of investment bankers, finders, consultants, attorneys, accountants or others) of the Company incurred or owed or reimbursed or reimbursable by the Company, pursuant to a Contract of the Company entered into by the Company prior to the Effective Time and in accordance with the terms of such Contract as of the Effective Time, in connection with the payment of any Contingent Payment after Closing, in each case to the extent unpaid at the time of payment of the applicable Contingent Payment, and the employer portion of any payroll or employment Taxes in respect of payments of such Contingent Payment in respect of the payments described in Section 2.8.1(b) to holders of Vested Company Stock Options, in respect of the payments described in Section 2.7.3(b) to holders of Company Restricted Stock for which a valid election under Section 83(b) of the Code has not been made, in respect of any Contingent Payments to be made to each Designated Individual in accordance with the applicable Designated Individual Agreement, in any case, regardless of whether such Taxes are payable at the time of or following the payment of the applicable Contingent Payment. For the avoidance of doubt, "Contingent Payment Deal Fees" does not include any fees or expenses that constitute "Deal Fees".

1.39. "**Contract**" means any loan or credit agreement, bond, debenture, note, mortgage, indenture, guarantee, security agreement, license, lease or other contract, commitment, agreement, instrument, obligation, undertaking, concession, franchise, license, evidence of Indebtedness or other legally binding arrangement or understanding, whether written or oral.

1.40. "**Copyright**" means any copyright (i) licensed to Company from any third party (other than commercial off-the-shelf software or other generally available software) or (ii) assigned to Company, registered by Company or applied for by Company.

1.41. "**Counterparts**" has the meaning set forth in Section 1.151.

1.42. "**Current Representation**" has the meaning set forth in Section 10.14.

1.43. "**D&O Indemnified Parties**" has the meaning set forth in Section 6.7.1.

1.44. "**Data Room**" means the electronic data room made available to Buyer by the Company in connection with the negotiation of this Agreement, as constituted on or prior to the date of this Agreement, hosted by Merrill DataSite at https://us1.merrillcorp.com/.

1.45. "**Deal Fees**" means, to the extent unpaid as of the Effective Time and, in all cases without duplication, all fees and expenses (including fees and expenses of investment bankers, finders, consultants, attorneys, accountants or others) of the Company incurred or owed or reimbursed or reimbursable by the Company in connection with the negotiation, entering into, and consummation of this Agreement, the Merger and the transactions contemplated hereunder, in each case to the extent unpaid

at the Closing. For the avoidance of doubt, "Deal Fees" does not include any fees or expenses that constitute "Contingent Payment Deal Fees".

1.46. "**Debt Payoff Amount**" means, to the extent unpaid as of the Effective Time, the amount necessary to fully discharge the Indebtedness of the Company outstanding as of the Effective Time.

1.47. "**Deferred Consideration**" means, (i) with respect to a Deferred Holder (other than the [*] and the Designated Individuals), the portion of the Closing Payment payable to such Deferred Holder that is set forth on Schedule I in the column entitled "Deferred Consideration," where such Deferred Holder's right to receive such payment is subject to the same restrictions as applied to the Deferred Holder's Designated Company Restricted Stock to which such Closing Payment relates, (ii) with respect to consideration payable to Designated Individuals, the consideration payable in accordance with the terms and conditions of a Designated Individual Agreement, or (iii) with respect to consideration payable to the [*], the consideration payable in accordance with the terms and conditions of the [*] Deferred Consideration Agreement.

1.48. "**Deferred Consideration Acknowledgment**" has the meaning set forth in Section 6.12.2.

1.49. "**Deferred Holder**" means the [*] and each holder of unvested Company Restricted Stock.

1.50. "**Designated Company Restricted Stock**" means Company Restricted Stock acquired more than one year prior to the Closing Date by the holder thereof and with respect to which a valid election under Section 83(b) of the Code has been made.

1.51. "**Designated Individual Agreement**" has the meaning set forth in Section 6.12.2.

1.52. "**Designated Individuals**" means all holders of Company Restricted Stock that exercised a Company Stock Option within one year prior to the Closing.

1.53. "**Designated Person**" has the meaning set forth in Section 10.14.

1.54. "**DGCL**" means the General Corporation Law of the State of Delaware.

1.55. "**Disclosing Party**" has the meaning set forth in Section 6.10.1.

1.56. "**Disclosure Schedule**" means the disclosure schedule delivered by the Company to Buyer contemporaneously with this Agreement. The Disclosure Schedule shall be arranged in sections and subsections corresponding to the numbered and lettered sections and subsections contained in ARTICLE 4. A disclosure in any section or subsection of the Disclosure Schedule shall be deemed to apply to each other section or subsection of the Disclosure Schedule and of ARTICLE 4 to which its relevance is reasonably apparent from a reading of such disclosure.

1.57. "**Disclosure Statement**" has the meaning set forth in Section 6.12.2.

1.58. "**Dissenting Shares**" has the meaning set forth in Section 2.16.1.

1.59. "**DOJ**" means the United States Department of Justice.

1.60. "**DM1**" means Myotonic Dystrophy Type 1.

1.61. "**DMD**" means Duchenne muscular dystrophy.

1.62. "**Due Date**" has the meaning set forth in Section 6.4.2.

1.63. "**Effective Time**" means the time when the Merger becomes effective, which shall be the later of (a) the acceptance of the filing of the Certificate of Merger by the Secretary of State of the State of Delaware or (b) such time thereafter as specified in the Certificate of Merger.

1.64. "**EMA**" means the European Medicines Agency or any successor entity thereto.

1.65. "**Environmental Law**" means any Applicable Law relating to (i) the manufacture, processing, use, labeling, distribution, treatment, storage, discharge, disposal, recycling, generation or transportation of Hazardous Materials; (ii) air (including indoor air), soil, surface, subsurface, groundwater or noise pollution; (iii) Releases or threatened Releases; (iv) protection of wildlife, endangered species, wetlands or natural resources; (v) underground storage tanks; (vi) above-ground storage tanks; (vii) health and safety of employees and other persons; and (viii) notification requirements relating to the foregoing. Without limiting the above, Environmental Law also includes the following within the United States and all foreign equivalents thereof: (a) CERCLA; (b) the Solid Waste Disposal Act, as amended by RCRA; (c) the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. §§ 11001 et seq.), as amended; (d) the Clean Air Act (42 U.S.C. §§ 7401 et seq.), as amended; (e) the Clean Water Act (33 U.S.C. §§ 1251 et seq.), as amended; (f) the Toxic Substances Control Act (15 U.S.C. §§ 2601 et seq.), as amended; (g) the Hazardous Materials Transportation Act (49 U.S.C. §§ 1801 et seq.), as amended; (h) the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. §§ 136 et seq.), as amended; (i) the Federal Safe Drinking Water Act (42 U.S.C. §§ 300 et seq.), as amended; (j) the Occupational Safety and Health Act (29 U.S.C §§ 651 et seq.), as amended; and (k) any Applicable Laws similar or analogous to (including counterparts of) any of the statutes listed above in effect as of the Closing Date.

1.66. "**ERISA**" has the meaning set forth in Section 4.18.1.

1.67. "**ERISA Affiliate**" has the meaning set forth in Section 4.18.2.

1.68. "**Escrow Agent**" has the meaning set forth in Section 2.15.1.

1.69. "**Escrow Agreement**" has the meaning set forth in Section 2.15.1.

1.70. "**Escrow Release Tax Costs**" means the employer portion of any payroll or employment Taxes in respect of payments to holders of Vested Company Stock Options and holders of Company Restricted Stock for which a valid election under Section 83(b) of the Code has not been made, in connection with the release of any portion of the Adjustment Escrow Fund or the Indemnification Escrow Fund, as applicable.

1.71. "**Escrow Termination Date**" means the date that is [*] after the Closing Date; *provided* that, if any portion of the Indemnification Escrow Fund is subject to pending claims for indemnification pursuant to ARTICLE 8 on such date, the Escrow Agreement and Indemnification Escrow Fund shall remain in effect until such pending claims have been paid or satisfied.

1.72. "**Estimated Closing Date Working Capital**" has the meaning set forth in Section 2.13.1.

1.73. "**European Commission**" means the European Commission or any successor entity that is responsible for granting Marketing Approvals authorizing the sale of pharmaceuticals in the European Union.

1.74. "**European Union**" or "**EU**" means (a) the economic, scientific and political organization of member states of the European Union as it may be constituted from time to time, which as of the date hereof consists of Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland and that certain portion of Cyprus included in such organization, (b) any member country of the European Economic Area that is not otherwise a member of the European Union and (c) any country not otherwise included in clauses (a) or (b) that participates in the unified or centralized filing system under the auspices of the EMA.

1.75. [*].

1.76. "**FCPA**" has the meaning set forth in Section 4.26.1.

1.77. "**FDA**" means the United States Food and Drug Administration or any successor entity thereto.

1.78. "**FD&C Act**" means the United States Federal Food, Drug, and Cosmetic Act, as amended, and the rules and regulations promulgated thereunder, or any foreign equivalent thereof.

1.79. "**Final Closing Working Capital Adjustment Amount**" has the meaning set forth in Section 2.13.2.

1.80. "**Financial Statements**" has the meaning set forth in Section 4.8.

1.81. "[*] **Deferred Consideration Agreement**" has the meaning set forth in Section 6.12.1.

1.82. [*].

1.83. "**Fraud**" means, with respect to a Person, an actual and intentional fraud committed by such Person with respect to a breach of the representations and warranties set forth in this Agreement; provided, that such actual and intentional fraud of a Person shall only be deemed to exist if such Person (a) had actual knowledge (as opposed to imputed or constructive knowledge) of a material misrepresentation and (b) actually intended to deceive the Person to which such material misrepresentation was made.

1.84. "**FTC**" means the United States Federal Trade Commission.

1.85. "**Fundamental Representations**" means the representations and warranties contained in Sections 4.1.1(i), 4.1.1(ii) and 4.1.2 (Organization and Standing; No Subsidiaries), 4.2 (Power and Authority; Binding Agreement), 4.3 (Authorization), 4.4 (Capitalization), 4.5.1(i) (Noncontravention with Constitutive Documents), 4.16 (Taxes) and 4.25 (Brokers).

1.86. "**GAAP**" means United States generally accepted accounting principles, consistently applied.

1.87. "**GCP**" means good clinical practices, which are the then-current standards, practices and procedures for Clinical Trials for pharmaceuticals and biological products, as set forth in the FD&C Act or other Applicable Law, and such standards of good clinical practice as are required by the Regulatory Authorities of the European Union and other organizations and governmental authorities in countries for which the applicable Product is intended to be developed, to the extent such standards are not less stringent than United States standards, in each case as they may be updated from time to time.

1.88. "**GLP**" means the then-current good laboratory practice standards promulgated or endorsed by the FDA as defined in 21

C.F.R. Part 58 or the successor thereto, or comparable regulatory standards in jurisdictions outside of the United States, as applicable, to the extent such standards are not less stringent than United States standards, in each case as they may be updated from time to time.

1.89. "**Governmental Authority**" means any court, administrative agency, department, commission, bureau, official, authority or other instrumentality of any federal, national, multinational, state, provincial, county, city or other political subdivision, or any mediator, arbitrator or arbitral body.

1.90. "**Hazardous Material**" means (i) any "hazardous substance," "pollutant", "toxic pollutant" or "contaminant" as defined under Environmental Laws; (ii) any "hazardous waste" as defined under RCRA, or any Environmental Law applicable to the management of waste; and (iii) any other substance which may be subject of regulatory action by any Governmental Authority in connection with any Environmental Law.

1.91. "**HSR Act**" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

1.92. "**IND**" means any Investigational New Drug application filed with the FDA pursuant to Part 312 of Title 21 of the U.S. Code of Federal Regulations or a similar application or submission for a Product filed with a Regulatory Authority in a country or group of countries.

1.93. "**Indebtedness**" of any Person means, in all cases without duplication, (i) all indebtedness of such Person for borrowed money or indebtedness issued or incurred in substitution or exchange for indebtedness for borrowed money, with respect to deposits or advances of any kind or for the deferred purchase price of property or services (other than current trade liabilities incurred in the Ordinary Course of Business and payable in accordance with customary practices and not more than 90 days past due), (ii) all obligations of such Person evidenced by bonds, debentures, notes, mortgages or similar instruments, including any indebtedness issued by the Company prior to the Closing, (iii) all obligations of such Person under conditional sale or other title retention agreements relating to any assets and properties purchased by such Person, (iv) all indebtedness of others secured by (or for which the holder of such indebtedness has an existing right, contingent or otherwise, to be secured by) any Lien (other than any Permitted Lien), whether or not the obligations secured thereby have been assumed, (v) all guarantees by such Person or contingent liabilities of such Person with respect to the indebtedness of others, (vi) all capital lease obligations under GAAP of such Person, (vii) all obligations of such Person as an account party in respect of letters of credit and banker's acceptances to the extent drawn, (viii) all obligations of such Person consisting of overdrafts (e.g., cash float reflected as a negative on the cash line), and (ix) obligations under any interest rate, currency or other hedging agreement. The foregoing shall specifically exclude (A) those items set forth in Subsection (ii) of the definition of Working Capital, (B) Deal Fees, and (C) any Change of Control Payments.

1.94. "**Indemnification Escrow Amount**" means [*].

1.95. "**Indemnification Escrow Fund**" has the meaning set forth in Section 2.15.1.

1.96. "**Indemnified Party**" means the Buyer Indemnified Parties or Company Holder Indemnified Parties, as applicable.

1.97. "**Indemnifying Company Holder**" has the meaning set forth in Section 8.4.4.

1.98. "**Indemnifying Party**" means any Person against whom a claim for indemnification is being asserted under any provision of ARTICLE 8.

1.99. "**Initiation**" or "**Initiate**" means, with respect to any Clinical Trial, dosing of the first human subject in such Clinical Trial.

1.100. "**Insolvency Event**" means that (i) Buyer voluntarily files, or notifies the Shareholders' Representative that Buyer intends to file voluntarily, a petition under any applicable insolvency or bankruptcy laws, (ii) a petition is filed against Buyer under any such insolvency or bankruptcy laws or Buyer notifies the Shareholders' Representative that such a petition will be filed, (iii) Buyer becomes or is declared insolvent, or is unable to pay its debts as they become due, (iv) Buyer is the subject of any proceedings related to liquidation, insolvency or the appointment of a receiver or similar officer for all or a substantial part of Buyer's or any Affiliate of Buyer's assets, (v) Buyer makes an assignment for the benefit of all or substantially all of its creditors, or (vi) Buyer enters into an agreement for the composition, extension, or readjustment of substantially all of its obligations.

1.101. "**Institution**" means any third party university or college that transfers, assigns, licenses, sublicenses, sells or otherwise disposes of any Intellectual Property to the Company or any of its respective Affiliates, in each case, in respect of a Product.

1.102. "**Intellectual Property**" means any (i) Patents, (ii) Marks or applications for Marks, (iii) Copyrights, (iv) Know-How or (v) other intellectual property or proprietary rights, including tangible biologic materials.

1.103. "**IRS**" means the Internal Revenue Service of the United States.

1.104. "**Judgment**" means any writ, judgment, injunction, order, decree, stipulation, settlement, determination or award entered by or with any Governmental Authority.

1.105. "**Know-How**" means data, results, pre-clinical and clinical protocols and data from studies and Clinical Trials, chemical

structures, chemical sequences, nucleic acid sequences, information, materials, inventions, know-how, formulas, trade secrets, techniques, methods, processes, procedures and developments, whether or not patentable; *provided* that Know-How does not include Patents but includes the information and inventions disclosed in Patents. Know-How shall include all contents of the Data Room.

1.106. "**Leased Property**" has the meaning set forth in Section 4.12.2.

1.107. "**Letter of Transmittal**" has the meaning set forth in Section 2.10.1.

1.108. "**Liabilities**" means any and all damages, debts, liabilities and obligations, claims, Taxes, interest obligations, deficiencies, judgments, assessments, fines, fees, penalties, and expenses, whether accrued or fixed, absolute or contingent, matured or unmatured or determined or determinable, including those arising under any Applicable Law, Action or Judgment and those arising under any Contract.

1.109. "**Lien**" means any lien, encumbrance, security interest, mortgage or pledge, whether arising by Contract or by operation of Applicable Law, or any conditional sale Contract, title retention Contract or other Contract to grant any of the foregoing.

1.110. "**Losses**" means any actions, fines, Liabilities, losses, costs (including the costs of defense and enforcement of this Agreement or any ancillary agreement, document or instrument to be delivered in connection herewith and therewith), monetary damages, expenses or amounts paid in settlement (in each case, including reasonable attorneys' and experts' fees and expenses).

1.111. "**Major European Countries**" means each of [*].

1.112. "**Mark**" means any trademark, trade name, trade dress, service mark or domain name.

1.113. "**Marketing Approval**" means, with respect to a Product in a particular jurisdiction, all approvals, licenses, registrations or authorizations necessary for the commercialization of such Product in such jurisdiction, including, with respect to the United States, approval of an Approval Application for such Product by the FDA and with respect to the European Union, approval of an Approval Application for such Product by the European Commission; *provided*, *however*, that in the event that the United Kingdom of Northern Ireland and Great Britain, or any portion thereof, or any other country that is, as of the date of this Agreement, a member of the European Union, is no longer part of the European Union, and for any other [*] that remains in the European Union, a "**Marketing Approval**" shall also include approval of an Approval Application for such Product by the applicable Regulatory Authority in such country. Marketing Approval excludes Price Approval.

1.114. "**Material Adverse Change**" means any change, effect, event, occurrence, state of facts or development which, individually or in the aggregate, would reasonably be expected to result in, or has resulted in, any change or effect, that (i) is materially adverse to the business, financial condition, assets, results or operations of the Company or (ii) would reasonably be expected to prevent or materially impede, materially interfere with, materially hinder or delay the consummation of the Merger or the other transactions contemplated by this Agreement; *provided* that none of the following shall be deemed, either alone or in combination, to constitute, and none of the following shall be taken into account in determining whether there has been or will be, a Material Adverse Change: (a) any change, effect, event, occurrence, state of facts or development relating to the economy in general in the United States or in any other jurisdiction in which the Company has operations or conducts business, so long as the effects do not disproportionately impact the Company; (b) any change, effect, event, occurrence, state of facts or development reasonably attributable to conditions affecting the industry in which the Company participates (other than as may arise or result from regulatory action by a Governmental Authority, so long as the effects do not disproportionately impact the Company); (c) any acts of terrorism, military action or war (whether or not declared) or any earthquakes, hurricanes, tsunamis, tornadoes, floods, mudslides, wild fires or other natural disasters, weather conditions and other force majeure events in the United States or in any other jurisdiction in which the Company has operations or conducts business; (d) actions by or on behalf of the Company expressly contemplated by this Agreement or taken at the written direction of Buyer; (e) changes in Applicable Laws or GAAP; (f) any change, effect, event, occurrence, state of facts or development arising out of or resulting from actions by the Parties expressly contemplated by this Agreement or the announcement of the transactions contemplated by this Agreement, including actions of collaborators, licensors, partners or suppliers and (g) any clinical or pre-clinical studies, trials, tests or results therefrom or announcements thereof with respect to any competitors' or potential competitors' products or product candidates (including regulatory changes that may affect such studies or trials and/or the market for any particular product), in each case to the extent arising out of or related to the period after the date of this Agreement.

1.115. "**Material Claims**" has the meaning set forth in Section 8.4.6.

1.116. "**Material Contract**" has the meaning set forth in Section 4.13.1.

1.117. "**Merger**" has the meaning set forth in the Recitals.

1.118. "**Merger Consideration**" has the meaning set forth in Section 2.7.3.

1.119. "**Merger Sub**" has the meaning set forth in the Preamble.

1.120. "**Merger Sub Common Stock**" means the common stock, par value $0.001 per share, of Merger Sub.

1.121. "**Milestone**" has the meaning set forth in Section 2.14.2.

1.122. "**Most Recent Balance Sheet**" means the unaudited consolidated balance sheet of the Company as of the Most Recent Balance Sheet Date.

1.123. "**Most Recent Balance Sheet Date**" has the meaning set forth in Section 4.8.

1.124. "**NDA**" means a new drug application that is submitted to the FDA for Marketing Approval for a Product, pursuant to 21 C.F.R. § 314.3.

1.125. "**Negative Working Capital Adjustment**" has the meaning set forth in Section 2.13.1.

1.126. "**Offer Letter**" has the meaning set forth in Section 7.7.1.

1.127. "**Option Cancellation Agreement**" has the meaning set forth in Section 2.10.3.

1.128. "**Option Merger Consideration**" has the meaning set forth in Section 2.8.1.

1.129. "**Ordinary Course of Business**" means the ordinary course of business, consistent with past practice.

1.130. "**Outside Date**" has the meaning set forth in Section 9.1.1(e).

1.131. "**Outstanding Shares**" means the sum of: (i) the total number of shares of Company Capital Stock issued and outstanding immediately prior to the Effective Time and (ii) the total number of shares of Company Common Stock issuable upon the exercise of any Vested Company Stock Options.

1.132. "**Party**" means Buyer, Merger Sub, the Company, the undersigned Company Holders and the Shareholders' Representative. For the avoidance of doubt, each of The University of Texas Southwestern Medical Center and The Board of Regents of the University of Texas System is not, and shall be deemed not to be, a Party for purposes of this definition of "Party."

1.133. "**Patents**" means the rights and interests in and to issued patents and pending patent applications or provisional patent applications in any country, jurisdiction or region (including inventor's certificates and utility models), including all Counterparts thereof, where "**Counterparts**" of a patent or patent application means any provisionals, non-provisionals, substitutions, continuations, continuations-in-part, divisionals, renewals and all patents granted thereon, and all reissues, reexaminations, extensions, confirmations, revalidations, registrations and patents of addition thereof, including patent term extensions and supplementary protection certificates, international patent applications filed under the Patent Cooperation Treaty and any foreign equivalents to any of the foregoing.

1.134. "**Paying Agent**" has the meaning set forth in Section 2.9.

1.135. "**Paying Agent Agreement**" has the meaning set forth in Section 2.9.

1.136. "**Permit**" means any federal, state or local, domestic or foreign, Governmental Authority consent, approval, order, authorization, certificate, filing, notice, permit, concession, registration, franchise, license or right.

1.137. "**Permitted Liens**" means the following: (i) (A) statutory Liens for Taxes not yet due or payable or (B) Liens for Taxes which are being contested in good faith and by appropriate proceedings and which are set forth on Section 1.156 of the Disclosure Schedule; (ii) Liens for assessments and other governmental charges or Liens of landlords, carriers, warehousemen, mechanics and repairmen incurred in the Ordinary Course of Business, in each case for sums not yet due and payable and not otherwise in default; (iii) Liens incurred in the Ordinary Course of Business in connection with workers' compensation, unemployment insurance and other types of social security; (iv) encumbrances in the nature of zoning restrictions, easements, rights, restrictions of record on the use of real property or other encumbrances or restrictions if the same do not materially detract from the current use by the Company of the property encumbered thereby; (v) Liens arising under applicable securities laws and (vi) Liens arising solely by action of Buyer.

1.138. "**Person**" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, incorporated association, joint venture or similar entity or organization, including a government or political subdivision or department or agency of a government.

1.139. "**Personal Property Leases**" has the meaning set forth in Section 4.11.2.

1.140. "**PHSA**" has the meaning set forth in Section 4.6.2.

1.141. "**Pivotal Trial**" means, with respect to a Product, a Clinical Trial that is intended (by Buyer, the Surviving Corporation, any of their respective Affiliates or any Buyer Rights Successor) (as of the time the Clinical Trial is Initiated) to generate sufficient data and results (along with data from all prior Clinical Trials conducted with respect to such Product) to support the filing of an Approval Application for such Product, including any Clinical Trial so intended and either (a) designated to be a "Phase 3" Clinical Trial in the protocol therefor or otherwise as a Clinical Trial on which an Approval Application will be based or [*].

1.142. "**Plans**" has the meaning set forth in Section 4.18.1.

1.143. "**Positive Working Capital Adjustment**" has the meaning set forth in Section 2.13.1.

1.144. "**Post-Closing Tax Period**" means any Tax period beginning after the Closing Date and the portion that begins after the Closing Date of any Straddle Tax Period (as determined in accordance with Section 6.4.8).

1.145. "**Pre-Closing Period**" has the meaning set forth in Section 6.1.1.

1.146. "**Post-Closing Representation**" has the meaning set forth in Section 10.14.

1.147. "**Pre-Closing Tax Liabilities**" means all Tax Liabilities of the Company for all Pre-Closing Tax Periods, determined without taking into account any Tax refunds or other Tax assets (provided, however, that Tax deductions, net operating losses and Tax credits that are available to be taken in a Pre-Closing Tax Period shall be taken into account in calculating Pre-Closing Tax Liabilities, but shall not reduce Pre-Closing Tax Liabilities below zero).

1.148. "**Pre-Closing Tax Period**" means any Tax period ending on or before the Closing Date and the portion through the end of the Closing Date of any Straddle Tax Period (as determined in accordance with Section 6.4.8).

1.149. "**Price Approval**" means, in any country where a Governmental Authority authorizes reimbursement for, or approves or determines pricing for, pharmaceutical products, receipt (or, if required to make such authorization, approval or determination effective, publication) of such reimbursement authorization or pricing approval or determination.

1.150. "**Pro Rata Percentage**" means, with respect to each Company Holder, the quotient obtained by dividing (i) the total number of shares of Company Capital Stock issued and outstanding immediately prior to the Effective Time held by such Company Holder, *plus* the total number of shares of Company Capital Stock issuable upon the exercise of any Vested Company Stock Options held by such Company Holder in each case immediately prior to the Effective Time, by (ii) the Outstanding Shares immediately prior to the Effective Time.

1.151. "**Product**" means any product (a) that is or was researched, developed, tested, labeled, manufactured, stored, imported, exported, marketed or distributed by or on behalf of the Company or any of its Affiliates on or before the date of this Agreement or at any time thereafter prior to the Closing Date, (b) that uses, incorporates, or is developed using any Company Intellectual Property or (c) the research, development, testing, labeling, manufacturing, storage, importation, exportation, marketing or distribution of which would, without a license or ownership under the relevant Patent, infringe a claim in any issued Patent, or infringe a claim in any pending Patent application (if such patent application were to issue as a patent) (i) in the Company Intellectual Property, (ii) filed on any Know-How that is included in or derived from any Company Intellectual Property or (iii) any Counterpart of any of the foregoing, whether such claim is in the form of such claim as of the date hereof, as of the Closing Date or at any time thereafter.

1.152. "**Proportionate Burden Amount**" means, with respect to each Company Holder at a given time, the Total Burden Amount *multiplied by* such Company Holder's Aggregate Payment Pro Rata Percentage, with such Aggregate Payment Pro Rata Percentage being calculated at the time of the payment of any such Merger Consideration to which this Section 2.7.4 is being applied, taking into account the portion of such Merger Consideration that such Company Holder would have received without the application of this Section 2.7.4 and assuming that the Total Burden Amount is zero.

1.153. "**PTO**" has the meaning set forth in Section 4.14.2.

1.154. "**Public Official**" means (i) any officer, employee or Representative of any Governmental Authority; (ii) any officer, employee or Representative of any commercial enterprise that is owned or controlled by a Governmental Authority, including any state-owned or controlled veterinary or medical facility; (iii) any officer, employee or Representative of any public international organization, such as the International Monetary Fund, the United Nations or the World Bank; (iv) any Person acting in an official capacity for any Governmental Authority, enterprise, or organization identified above; and (v) any political party, party official or candidate for political office. [*].

1.155. "**Purchase Price**" means $319,300,000.

1.156. "**RCRA**" means the Resource Conservation and Recovery Act (42 U.S.C. §§ 6901 et seq.), as amended, and any foreign and state law counterparts.

1.157. "**Receiving Party**" has the meaning set forth in Section 6.10.1.

1.158. "**Regulatory Approval**" means the technical, medical and scientific licenses, registrations, authorizations and approvals (including approvals of Approval Applications, supplements and amendments, pre- and post- approvals, and labeling approvals) of any Regulatory Authority, necessary for the research, development, clinical testing, commercial manufacture, distribution, marketing, promotion, offer for sale, use, import, export or sale of a pharmaceutical or biological product in a regulatory jurisdiction, including Marketing Approval and Price Approval.

1.159. "**Regulatory Authority**" means, with respect to a country, any national (*e.g.*, the FDA), supra-national (*e.g.*, the European Commission, the Council of the European Union or the EMA), regional, state or local regulatory agency, department, bureau,

commission, council or other Governmental Authority involved in the granting of Regulatory Approvals for or oversight of the research, development, testing, manufacturing, labeling, storage, distribution, marketing, promotion, importing, exporting or sale of pharmaceutical or biological products in such country.

1.160. "**Regulatory Filings**" means, collectively: (a) any filings, submissions, communications or correspondence with any Regulatory Authority, including all INDs, Approval Applications, establishment license applications, Drug Master Files, applications for designation as an "Orphan Product(s)" under the Orphan Drug Act, for "Fast Track" status under Section 506 of the FD&C Act (21 U.S.C. § 356) or for a Special Protocol Assessment under Section 505(b)(4)(B) and (C) of the FD&C Act (21 U.S.C. § 355(b)(4)(B)) and all other similar filings (including counterparts of any of the foregoing in any country or region); (b) any applications for Regulatory Approval and other applications, filings, dossiers or similar documents submitted to a Regulatory Authority in any country for the purpose of obtaining Regulatory Approval from that Regulatory Authority; (c) any Patent-related filings with any Regulatory Authority; (d) any safety reports filed with a Regulatory Authority; (e) all supplements and amendments to any of the foregoing; and (f) all data and other information contained in, and correspondence with any Regulatory Authority relating to, any of the foregoing.

1.161. "**Released Parties**" has the meaning set forth in Section 6.8.

1.162. "**Releases**" means any spill, discharge, leak, migration, emission, escape, injection, dumping, leaching, or other release of any Hazardous Material into the indoor or outdoor environment, whether or not intentional, and whether or not notification or reporting to any Governmental Authority was or is required at the time it initially occurred or continued to occur. Without limiting the above, Release includes the meaning of "Release" as defined under CERCLA.

1.163. "**Representative Losses**" has the meaning set forth in Section 2.11.3.

1.164. "**Representatives**" means with respect to a Person, such Person's legal, financial, internal and independent accounting and other advisors and representatives. [*].

1.165. "**Restricted Activities Agreement**" has the meaning set forth in Section 6.11.1.

1.166. "**Restricted Individuals**" means [*].

1.167. "**Restricted Period**" has the meaning set forth in Section 6.11.1.

1.168. "**Restricted Stock Purchase Price**" has the meaning set forth in Section 1.187.

1.169. "**Schedule I**" means a statement, in the form of Schedule I attached hereto, with the following information:

(a) the name and address of each Company Holder,

(b) the number of shares of each class or series of Company Capital Stock held by each Company Holder and in the case of Company Stock Options, the number of shares of each class or series of Company Common Stock underlying each such Company Stock Option, the exercise price, the date of grant, and the vesting schedule (including any accelerated vesting conditions), and in the case of Company Restricted Stock, the number of shares of each class or series of Company Common Stock originally subject to such grant of Company Restricted Stock, the purchase date, the original purchase price per share (and such purchase price, in the aggregate, the "**Restricted Stock Purchase Price**"), and the number of shares of each class or series of Company Common Stock that, as of Closing, remain subject to any Company right of repurchase under the terms of such Company Restricted Stock award, and the vesting schedule (including any accelerated vesting conditions) applicable thereto and whether the Company Restricted Stock is Designated Company Restricted Stock,

(c) any Deferred Consideration with respect to each Deferred Holder,

(d) the respective portion of the Shareholders' Representative Reserve that is allocated to each Company Holder in accordance with the terms of this Agreement,

(e) the respective portion of the Indemnification Escrow Amount that is allocated to each Company Holder in accordance with the terms of this Agreement,

(f) the respective portion of the Adjustment Escrow Amount that is allocated to each Company Holder in accordance with the terms of this Agreement,

(g) the respective portion of each Contingent Payment that becomes due and payable in accordance with Section 2.14, that is allocated to each Company Holder in accordance with the terms of this Agreement, and

(h) each Company Holder's Pro Rata Percentage, Closing Payment Pro Rata Percentage and Upfront Payment Pro Rata Percentage.

From time to time after the Effective Time, the Shareholders' Representative may, by written notice to the Buyer, update, correct or otherwise amend or modify Schedule I in any manner that is not otherwise inconsistent with the express provisions of ARTICLE 2; provided that no such update, correction, amendment or modification shall (i) operate as a

waiver (including with respect to ARTICLE 8) or otherwise affect any representation, warranty or covenant in this Agreement or (ii) modify any Company Holder's rights in respect of payment of Merger Consideration or Option Merger Consideration, as applicable.

1.170. "**Section 280G**" has the meaning set forth in Section 4.16.17.

1.171. "**Section 280G Payments**" has the meaning set forth in Section 6.14.

1.172. "**Securities Act**" means the Securities Act of 1933, as amended.

1.173. "**Set-off Cap**" has the meaning set forth in Section 8.8.

1.174. "**Shareholder Approval**" has the meaning set forth in Section 4.3.2.

1.175. "**Shareholders' Representative**" has the meaning set forth in Section 2.11.1.

1.176. "**Shareholders' Representative Reserve**" means an amount equal to [*].

1.177. "**Specified Employee**" means each holder of Unvested Company Stock Options.

1.178. "**Straddle Tax Period**" means any Tax period that includes (but does not end on) the Closing Date.

1.179. "**Subsidiary**" means, with respect to any Person, (i) any corporation more than 50% of whose stock of any class or classes is owned by such Person directly or indirectly through one or more Subsidiaries of such Person and (ii) any partnership, association, joint venture or other entity in which such Person directly or indirectly through one or more Subsidiaries of such Person has more than a 50% equity interest.

1.180. "**Surviving Corporation**" has the meaning set forth in Section 2.1.

1.181. "**Target**" when used as a noun, means a nucleotide sequence the activity, inactivity, function or expression of which is associated with a human disease and which is to be edited, engineered or modulated in order to treat, ameliorate or prevent such disease.

1.182. "**Targeting**", "**Targeted**" and "**Targets**", when used as a verb, means editing, engineering or modulating (including by means of gene knock-out, gene tagging, gene disruption, gene mutation, gene insertion, gene editing, gene deletion, gene activation, gene silencing or gene knock-in) a Target or the function or expression thereof; [*].

1.183. "**Tax**" (and, with correlative meaning, "**Taxes**" and "**Taxable**") means (a) any United States local, state or federal or non-U.S. taxes, including income, capital gains, alternative or add-on minimum, estimated, gross income, gross receipts, sales, use, value added, ad valorem, franchise, capital stock or other equity securities, profits, license, registration, withholding, employment, unemployment, disability, severance, occupation, social security (or similar including FICA), payroll, transfer, conveyance, documentary, stamp, property (real, tangible or intangible), premium, escheat or unclaimed property obligation, environmental, windfall profits, customs duties, net proceeds, goods and services, leasing, registration or other taxes of any kind or any other fees, charges, levies, excises, duties or assessments in the nature of taxes, and including any addition to tax or additional amount, together with any interest, penalties or addition thereto, whether disputed or not.

1.184. "**Tax Law**" means all Applicable Laws relating to or regulating the assessment, determination, reporting, collection or imposition of Taxes, including any formal or informal interpretation or guidance issued by a Taxing Authority.

1.185. "**Tax Return**" means any report, return, declaration, claim for refund, information return, statement, designation, election, notice or certificate filed or required to be filed with any Taxing Authority in connection with the determination, reporting, assessment, collection or payment of any Taxes, including any schedule or attachment thereto and including any amendment thereof.

1.186. "**Taxing Authority**" means any Governmental Authority having jurisdiction over the assessment, determination, reporting, collection, or imposition of any Taxes (domestic or foreign).

1.187. "**Third Party Claim**" has the meaning set forth in Section 8.2.

1.188. "**Total Burden Amount**" shall mean, collectively and at a given time, the sum, without duplication, of (1) all items described in clauses (ii) through (vii) of the definition of Closing Payment (to the extent not otherwise paid or returned to the Company Holders after Closing and prior to such time) *plus* (2) without duplication of amounts described in the foregoing clause (1), all amounts paid to, or recovered (including via set off) by, Buyer in connection with any indemnity provided pursuant to Section 8.2.

1.189. "**Transaction Proposal**" means any inquiry, proposal or offer from any Person relating to, or that would reasonably be expected to lead to, any (i) direct or indirect acquisition or sale of a substantial portion of the assets of the Company, (ii) transaction which would result in a change in the capitalization of the Company as of the date hereof, including any sale or issuance of any Capital Stock of the Company to any Person (but excluding (A) the issuance of Company Stock Options and (B) the issuance of Capital Stock upon the exercise of Company Stock Options in accordance with the terms of this

Agreement), (iii) license or grant of rights to any third party for any of the Company Intellectual Property, or (iv) direct or indirect acquisition or sale of any of the Capital Stock of the Company (whether through a share purchase, merger, consolidation, business combination, recapitalization or similar transaction involving the Company), in each case of clauses (i) through (iv), other than the Merger and the other transactions contemplated by this Agreement.

1.190. "**Transfer Taxes**" means all transfer, sales, use, registration, real property transfer, goods and services, documentary or mortgage recording, value added, stamp and similar Taxes and fees (including any penalties and interest) incurred, imposed, assessed or payable in connection with or as a result of this Agreement or any transactions contemplated hereby.

1.191. "**U.S.**" or "**United States**" means the United States of America and all of its districts, territories and possessions.

1.192. "**Union**" has the meaning set forth in Section 4.13.1(a).

1.193. "**Unvested Company Stock Option**" means a Company Stock Option (or portion thereof) that is outstanding as of immediately prior to the Effective Time and (after giving effect to any accelerated vesting in connection with the transactions contemplated by this Agreement as provided for on the date hereof in the agreement evidencing such Company Stock Option or in any amendment to such agreement between the Company and the holder of such Company Stock Option in effect on the date hereof) is not a Vested Company Stock Option.

1.194. "**Upfront Closing Payment**" means the Closing Payment *excluding* the aggregate amount of the Deferred Consideration payable to all Deferred Holders set forth on Schedule I.

1.195. "**Upfront Payment Pro Rata Percentage**" means, with respect to any Company Holder, the quotient obtained by dividing (i) the amount of the Upfront Closing Payment that is actually paid to such Company Holder in accordance with Section 2.7.3 and Section 2.8 (which in the case of a holder of Vested Company Stock Options, shall be increased by the aggregate exercise price of all Vested Company Stock Options held by such holder that was deducted from the Closing Payment payable at Closing to such holder pursuant to Section 2.8.1(a)(II)) by (ii) (A) the Upfront Closing Payment *increased* by (B) the aggregate exercise price of all Vested Company Stock Options deducted from the Closing Payment pursuant to Section 2.8.1(a)(II).

1.196. "**UT Agreements**" means [*].

1.197. "**Vested Company Stock Option**" means a Company Stock Option (or portion thereof) that is outstanding, vested and exercisable as of immediately prior to the Effective Time (after giving effect to any accelerated vesting in connection with the transactions contemplated by this Agreement as provided for on the date hereof in the agreement evidencing such Company Stock Option or in any amendment to such agreement between the Company and the holder of such Company Stock Option in effect on the date hereof).

1.198. "**WARN**" has the meaning set forth in Section 4.19.4.

1.199. "**Working Capital**" means an amount, which may be positive or negative, equal to (i) the sum of the Company's current assets, including cash (which shall be deemed to include the aggregate exercise price of all Vested Company Stock Options and the amount of outstanding Indebtedness (including accrued and unpaid interest thereon) encumbering any Company Restricted Stock, including the loans specified on Section 4.4.2 of the Disclosure Schedule), cash equivalents (including all bank account balances, marketable securities and certificates of deposit), accounts receivable (net of reserves), deposits on leased property, inventory (net of reserves), and prepaid expenses, all as determined by reference to only the line items noted on the Working Capital Exhibit as current assets; minus (ii) the sum of the Company's current liabilities, including accrued deferred compensation and the employer portion of any payroll or employment Taxes in respect of payments of such accrued deferred compensation (excluding, for clarity, liabilities in respect of Company Stock Option or Company Restricted Stock), accrued expenses and accounts payable all as determined by reference to only the line items noted on the Working Capital Exhibit as current liabilities; in each case calculated in accordance with GAAP; *provided, however,* that, for purposes of this definition of Working Capital, whether or not in accordance with GAAP, (x) "current liabilities" shall (A) include all unpaid Pre-Closing Tax Liabilities (including an estimate of Pre-Closing Tax Liabilities for the portion of any Straddle Tax Period ending on the Closing Date), and shall exclude the amount of any Deal Fees, Debt Payoff Amount and Change of Control Payments to the extent such amounts are deducted in the calculation of the Closing Payment and (B) [*] and (y) Working Capital shall not include current or deferred Tax assets (including rights to refunds) or deferred Tax Liabilities.

1.200. "**Working Capital Exhibit**" means the sample Working Capital calculation attached as Exhibit A, which shall be prepared in accordance with GAAP (except as specified in the definition of Working Capital) using the accounting principles, policies, methods, treatments or procedures specified thereon and used in the preparation of the Financial Statements.

1.201. "**Written Consent**" means the written consent of the Company Shareholders in the form attached as Exhibit B, approving the amendment to the Amended and Restated Certificate of Incorporation of the Company in the form attached as Exhibit C (the "**Charter Amendment**"), adopting this Agreement and approving the consummation of the Merger in accordance with this Agreement.

1.1.2. Descriptive Headings; Certain Interpretations.

(a) Headings. The descriptive headings of this Agreement are for convenience only and will be of no force or effect in

construing or interpreting any of the provisions of this Agreement.

(b) Interpretations. Except where the context expressly requires otherwise, (a) the use of any gender herein will be deemed to encompass references to any or all genders, and the use of the singular will be deemed to include the plural (and vice versa), (b) the words "include," "includes" and "including" will be deemed to be followed by the phrase "without limitation," (c) the word "will" will be construed to have the same meaning and effect as the word "shall," (d) any definition of or reference to any agreement, instrument or other document herein will be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein), (e) any reference herein to any Person will be construed to include the Person's successors and assigns, (f) the words "herein," "hereof" and "hereunder," and words of similar import, will be construed to refer to this Agreement in its entirety and not to any particular provision hereof, (g) all references herein to Sections, Schedules or Exhibits will be construed to refer to Sections, Schedules or Exhibits of this Agreement, and references to this Agreement include all Schedules and Exhibits hereto, (h) the word "notice" will mean notice in writing (whether or not specifically stated) and will include notices, consents, approvals and other written communications contemplated under this Agreement, (i) provisions that require that a Party, the Parties or any committee hereunder "agree," "consent" or "approve" or the like will require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, e-mail (solely with return receipt), approved minutes or otherwise (but excluding e-mail without return receipt and instant messaging), (j) references to any specific law, rule or regulation, or article, section or other division thereof, will be deemed to include the then-current amendments thereto or any replacement or successor law, rule or regulation thereof, (k) any action or occurrence deemed to be effective as of a particular date will be deemed to be effective as of 11:59 PM ET on such date, (l) the term "or" will be interpreted in the inclusive sense commonly associated with the term "and/or," and (m) the phrases "made available to Buyer," "provided to Buyer," and similar expressions in respect of any document or information will be construed for all purposes of this Agreement as meaning that a copy of such document or information was delivered by or on behalf of Company to Buyer in each case no later than two Business Days prior to the date hereof in the Data Room.

ARTICLE 2
THE MERGER

2.1. **The Merger**. Upon the terms and subject to the conditions set forth in this Agreement, at the Effective Time, Merger Sub shall be merged with and into the Company in accordance with the DGCL. Following the Merger, the separate corporate existence of Merger Sub shall cease and the Company shall continue as the surviving corporation (the "**Surviving Corporation**") and a wholly-owned Subsidiary of Buyer.

2.2. **Closing**. The closing of the Merger (the "**Closing**") shall be held at the offices of Ropes & Gray LLP, Prudential Tower, 800 Boylston Street, Boston, MA 02199, at 10:00 a.m. on the date as soon as practicable, and in any event not later than four Business Days, following the satisfaction (except to the extent waived in accordance with ARTICLE 3) of each Party's conditions to Closing set forth in ARTICLE 3 (other than the delivery of items to be delivered at the Closing and other than satisfaction of those conditions that by their nature are to be satisfied at the Closing, it being understood that the occurrence of the Closing shall remain subject to the delivery of such items and the satisfaction or waiver of such conditions at the Closing);

2.3. **Actions at the Closing**.

2.3.1. No later than four Business Days prior to the Closing Date, the Company shall deliver to Buyer the following:

(a) a certificate of the Company, executed by its Chief Executive Officer, certifying that Schedule I is true, complete and correct in all respects on and as of the Closing Date;

(b) a schedule setting forth all Deal Fees payable in connection with Closing, including the recipient of such Deal Fees, copies of any final invoices that state the invoice is final and include wire transfer instructions or mailing address for payment to be made;

(c) a schedule setting forth the Debt Payoff Amount payable in connection with Closing, including the recipient of such Debt Payoff Amount, copies of any final invoices that state the invoice is final and include wire transfer instructions or mailing address for payment to be made;

(d) a schedule setting forth all Change of Control Payments, if any, including the recipient of such Change of Control Payments, the exact amounts to be paid to such recipient, whether such Change of Control Payments are to be paid through the payroll process of the Surviving Corporation, and, with respect to any Change of Control Payments not paid through the payroll process of the Surviving Corporation, but rather by the Paying Agent, the wire transfer instructions or mailing address for payment to be made;

(e) a schedule setting forth the Shareholders' Representative Reserve, including wire transfer instructions or mailing address for payment to be made; and

(f) a statement setting forth the Company's good faith calculation of the Working Capital of the Company as of the close of business on the day immediately prior to the Closing Date (except that Pre-Closing Tax Liabilities shall be

determined as of the end of the day on the Closing Date), in accordance with Section 2.13.1.

2.3.2. At the Closing, Buyer shall deposit with the Paying Agent (or the Company, with respect to amounts to be paid through payroll or to Taxing Authorities):

(a) the Upfront Closing Payment, which the Paying Agent shall pay to the Company Holders in accordance with the terms of the Paying Agent Agreement;

(b) the Indemnification Escrow Amount, which the Paying Agent shall promptly deposit into the Indemnification Escrow Fund (as contemplated by Section 2.15) with the Escrow Agent, to be held in trust by the Escrow Agent pursuant to the Escrow Agreement;

(c) the Adjustment Escrow Amount, which the Paying Agent shall promptly deposit into the Adjustment Escrow Fund (as contemplated by Section 2.15) with the Escrow Agent, to be held in trust by the Escrow Agent pursuant to the Escrow Agreement;

(d) the amount of the Deal Fees as set forth on the schedule described in Section 2.3.1(b), which the Paying Agent shall pay to the applicable recipients thereof as set forth on the schedule described in Section 2.3.1(b);

(e) the Debt Payoff Amount as set forth on the schedule described in Section 2.3.1(c), which the Paying Agent shall pay to the applicable recipients thereof as set forth on the schedule described in Section 2.3.1(c);

(f) the amount of the Change of Control Payments as set forth on the schedule described in Section 2.3.1(d), which the Surviving Corporation shall pay to the applicable recipients thereof as set forth on the schedule described in Section 2.3.1(d); and

(g) the Shareholders' Representative Reserve as set forth on the schedule described in Section 2.3.1(e), which the Paying Agent shall promptly deposit (as contemplated by Section 2.11.6) with the Shareholders' Representative.

2.3.3. At the Closing, the Parties shall cause the Merger to be consummated by filing with the Secretary of State of the State of Delaware a certificate of merger (the "**Certificate of Merger**") in substantially the form of Exhibit D attached hereto and executed in accordance with the relevant provisions of the DGCL.

2.4. **Effects of the Merger**. The Merger shall have the effects set forth in this Agreement and in Section 259 of the DGCL.

2.5. **Certificate of Incorporation and By-laws**. At the Effective Time, the Constitutive Documents of the Surviving Corporation shall be amended to be the same as the Constitutive Documents of Merger Sub in effect immediately prior to the Effective Time, respectively, until amended, except that the name of the corporation set forth therein shall be changed to the name of the Company.

2.6. **Directors and Officers of Surviving Corporation**. The directors of Merger Sub immediately prior to the Effective Time shall be the directors of the Surviving Corporation immediately following the Effective Time, until the earlier of their resignation or removal or until their successors are duly elected and qualified. The officers of the Company immediately prior to the Effective Time shall be the officers of the Surviving Corporation immediately following the Effective Time, until the earlier of their resignation or removal or until their successors are duly elected and qualified.

2.7. **Conversion of Capital Stock**. On the terms and subject to the conditions set forth in this Agreement, at the Effective Time, by virtue of the Merger and without any action on the part of Buyer, the Company, Merger Sub or any Company Shareholder:

2.7.1. each issued and outstanding share of Merger Sub Common Stock shall be converted into and shall become one share of common stock, par value $0.0001 per share, of the Surviving Corporation;

2.7.2. each share of Company Capital Stock that is held by the Company as treasury stock or owned by the Company shall be canceled and retired and shall cease to exist and no consideration shall be delivered in exchange therefor;

2.7.3. except as provided in Sections 2.7.2 and 2.16, each share of Company Capital Stock then outstanding held by each Company Holder (including, for the avoidance of doubt, each share of Company Restricted Stock) shall be converted into the right to receive, without interest and subject to Sections 2.10 and 2.11, the following payments (collectively, the "**Merger Consideration**"):

(a) an amount in cash at Closing equal to the Closing Payment allocated to such Company Holder on Schedule I, less, with respect to any Company Restricted Stock for which a valid Section 83(b) election under the Code has not been made, any applicable withholding Taxes thereon and any applicable withholding Taxes in respect of the portion of the Shareholders' Representative Reserve allocable to such Company Restricted Stock, *provided*, *however*, that with respect to any Deferred Holder, the right to receive any amount that is Deferred Consideration shall be (i) with respect to the [*], subject to the applicable terms and conditions set forth in the [*] Deferred Consideration Agreement, (ii) with respect to holders of Designated Company Restricted Stock, in accordance with Schedule I, or (iii) with respect to any Designated Individual, subject to the applicable terms and conditions set forth in such Designated Individual's Designated Individual Agreements, and

(b) subject to the terms of Section 2.7.4 below, the amounts, if any, that may become payable to such Company Holder, as set forth on Schedule I, from (I) any Contingent Payments that become due and payable in accordance with Section 2.14, *minus* the applicable Company Holder's Pro Rata Percentage of any applicable Contingent Payment Deal Fees, (II) any cash disbursements made to Company Holders by the Shareholders' Representative in accordance with Section 2.11.6, (III) the amount of any payment due to Company Holders pursuant to Section 2.13.2, and (IV) any cash disbursements made to Company Holders by the Paying Agent in accordance with Section 2.15.2 and Section 2.15.3, less, with respect to any Company Restricted Stock for which a valid Section 83(b) election under the Code has not been made, any applicable withholding Taxes thereon and any applicable withholding Taxes in respect of the portion of the Shareholders' Representative Reserve allocable to such Company Restricted Stock.

2.7.4. Notwithstanding anything to the contrary in this Agreement, to the extent any Merger Consideration (including Deferred Consideration or Contingent Payments) become due and payable under this Agreement after the Closing, then the distribution of any amounts payable in respect thereof pursuant to Section 2.7.3(b), Section 2.8.1(b) or otherwise shall be reallocated among the Company Holders at the time of such distribution solely to the extent necessary to ensure that each Company Holder is bearing, as of immediately after giving effect to payment of all such Merger Consideration, such Company Holder's Proportionate Burden Amount. For the sake of clarity, an illustrative example of such reallocation is set forth on Section 2.7.4 of the Disclosure Schedule.

2.7.5. The shares of Company Capital Stock converted into the right to receive Merger Consideration in accordance with this Section 2.7 shall no longer be outstanding and shall automatically be canceled and retired and shall cease to exist, and each holder of a certificate that immediately prior to the Effective Time represented any such shares (a "**Certificate**") shall cease to have any rights with respect thereto, except the right to receive the Merger Consideration. The right of any holder of any share of Company Capital Stock to receive the Merger Consideration shall be subject to and reduced by the amount of any Tax withholding that is required under Applicable Law (including any withholding in respect of the Shareholders' Representative Reserve).

2.7.6. For Tax purposes, the Parties agree that to the extent permitted by Applicable Law all payments made under Section 2.7.3 or Section 2.7.4 (other than payments to Designated Individuals) shall be reported as additional Merger Consideration, except to the extent such amounts are characterized as interest for Tax purposes.

2.8. **Company Stock Options and Company Restricted Stock**.

2.8.1. At the Effective Time, each Vested Company Stock Option shall be terminated in exchange for the right to receive, without interest, subject to Section 2.10 and 2.11 (collectively, the "**Option Merger Consideration**"), with such disbursements paid through the payroll process of the Surviving Corporation or through the Paying Agent, as applicable:

(a) an amount in cash at Closing equal to the excess, if any, of the Closing Payment allocated to such Vested Company Stock Option on Schedule I over the aggregate exercise of such Vested Company Stock Option, less any applicable withholding Taxes thereon and any applicable withholding Taxes in respect of the portion of the Shareholders' Representative Reserve allocable to such Vested Company Stock Option; and

(b) subject to the terms of Section 2.7.4, the amounts, if any, that may become payable in respect of such Vested Company Stock Option, as set forth on Schedule I, from (I) any Contingent Payments that become due and payable in accordance with Section 2.14, *minus* the applicable Company Holder's Pro Rata Percentage of any applicable Contingent Payment Deal Fees, (II) any cash disbursements made to Company Holders by the Paying Agent in accordance with Section 2.11.6, (III) the amount of any payment due to Company Holders pursuant to Section 2.13.2, and (IV) any cash disbursements made to Company Holders by the Paying Agent in accordance with Section 2.15.2 and Section 2.15.3, and in each case less any applicable withholding Taxes thereon.

2.8.2. At the Effective Time, each Unvested Company Stock Option shall be terminated without the payment of any consideration in respect thereof and each share of Company Restricted Stock, other than Designated Company Restricted Stock, shall be repurchased by the Company for the original purchase price of such Company Restricted Stock with such additional amounts payable in respect of such Company Restricted Stock in connection with the Merger set forth in Section 2.7.3 above. The Board of Directors (and all committees thereof) shall adopt such resolutions or take such other actions (including obtaining any required consents, but not including the payment of any cash or non-cash consideration without Buyer's prior written consent) as may be required to effect the transactions described in this Section 2.8 as of the Effective Time. No later than four Business Days prior to the Effective Time, the Company shall provide copies of any such resolutions or other written communications or documents relating to the foregoing for Buyer's review and consent, not to be unreasonably withheld, conditioned, or delayed. The Company shall terminate the Company Stock Plan and all rights thereunder as of the Effective Time without Liability to Buyer and its Affiliates (including, following the Effective Time, the Surviving Corporation and its Affiliates), other than, with respect to Vested Company Stock Options, the obligation to make the payments required by Section 2.8.1 and with respect to Company Restricted Stock, the obligation to make the payments required by the terms of this Agreement and the Designated Individual Agreements. At and after the Effective Time, no Person shall have any right under the Company Stock Plan or any Contracts evidencing Company Stock Options or Company Restricted Stock awards.

2.9. **Paying Agent**. In connection with the Closing, Buyer, the Shareholders' Representative and Acquiom Financial LLC, a

Colorado limited liability company (in its capacity as the payments administrator, the "**Paying Agent**") shall have executed and delivered a paying agent agreement, in a form mutually agreed upon between such parties (the "**Paying Agent Agreement**"), pursuant to which the Paying Agent shall make the distributions of payments and take the other actions contemplated to be made and taken by the Paying Agent pursuant to and in accordance with the Paying Agent Agreement.

2.10. **Exchange Procedures**.

2.10.1. As promptly as reasonably practicable after the date of this Agreement (but in any event, no later than ten Business Days after the date of this Agreement), Buyer shall cause the Paying Agent to provide to each holder of a Certificate (i) a letter of transmittal in a form mutually agreed upon between the Parties and the Paying Agent (a "**Letter of Transmittal**") and (ii) instructions for use of the Letter of Transmittal in effecting the surrender of such Certificate in exchange for the Merger Consideration to be paid in accordance with Section 2.7.3 with respect to each of the shares of Company Capital Stock represented thereby. Upon surrender of a Certificate to the Paying Agent, together with such Letter of Transmittal duly executed and completed in accordance with the instructions thereto and a properly executed Form W-9 or appropriate Form W-8 (including any required attachments or schedules thereto), as applicable, from such holder in form and substance acceptable to the Paying Agent, the Paying Agent shall pay promptly, by electronic check (ACH), to the holder of such Certificate the cash payment described in Section 2.7.3(a) (rounded up to the nearest $0.01) into which the shares of Company Capital Stock represented by such Certificate were converted pursuant to Section 2.7.3, without any interest thereon, *provided*, *however*, that (A) any such Certificates and Letters of Transmittal delivered to the Paying Agent prior to the Closing shall be held in escrow by the Paying Agent, pending the consummation of the Closing, and shall be deemed to be surrendered upon the Closing, subject to the satisfaction of the instructions provided to such holder for effecting the surrender of the Certificates, (B) with respect to any Deferred Holder, the Paying Agent shall not pay to such holder any portion of Merger Consideration that is Deferred Consideration until the satisfaction of the applicable terms and conditions set forth in (1) with respect to the [*], the [*] Deferred Consideration Agreement, (2) with respect to any Designated Individual, such Designated Individual's Designated Individual Agreement or (3) with respect to any Deferred Holder that is not the [*] or a Designated Individual, in accordance with Schedule I and (C) payments in respect of shares of Company Restricted Stock for which a valid election under Section 83(b) of the Code has not been shall be made through the Surviving Corporation's payroll and not by the Paying Agent. The Certificates so surrendered shall forthwith be canceled. Until so surrendered, such Certificates shall upon and following the Effective Time represent solely the right to receive the Merger Consideration with respect to the shares of Company Capital Stock, without interest. Except as set forth in Section 2.10.2, no holder of a Certificate will be entitled to be paid any Merger Consideration unless and until such holder shall have complied with the requirements set forth in this Section 2.10.1, including due execution and delivery to the Paying Agent of the Letter of Transmittal by such holder of such Certificate, which constitutes an integral component of and limitation on the Merger Consideration.

2.10.2. If any Certificate shall have been lost, stolen or destroyed, upon the making of an affidavit of that fact by the Person claiming such Certificate to be lost, stolen or destroyed, Buyer shall issue in exchange for such lost, stolen or destroyed Certificate the Merger Consideration with respect to the shares of Company Capital Stock represented thereby to be paid (by the Paying Agent) in accordance with Section 2.7.3 and as contemplated under this ARTICLE 2; *provided*, *however*, that Buyer may, in its reasonable discretion and as a condition precedent to the issuance thereof, require the owner of such lost, stolen or destroyed Certificate to deliver an indemnification agreement as it may reasonably require with respect to any claim that may be made against Buyer or the Surviving Corporation with respect to the Certificate alleged to have been lost, stolen or destroyed. For the avoidance of doubt, any Person submitting such affidavit to the Paying Agent shall be liable under ARTICLE 8 to Buyer for any Losses resulting from any inaccuracies in the affidavit.

2.10.3. As promptly as reasonably practicable after the date of this Agreement (but in any event, no later than ten Business Days after the date of this Agreement), the Company shall provide to each holder of a Company Stock Option an option cancellation agreement in a form mutually agreed upon between the Parties (an "**Option Cancellation Agreement**"). Promptly following the receipt by the Paying Agent of an Option Cancellation Agreement duly executed and completed in accordance with the instructions thereto, the applicable portion of the Option Merger Consideration as set forth on Schedule I shall (i) first be paid by the Buyer to the Company and then shall be paid by the Surviving Corporation to such holder of such Vested Company Stock Option or (ii) for holders of Vested Company Stock Options who are not current or former employees of the Company, paid by the Paying Agent directly to such holder, in each case of clauses (i) and (ii), in accordance with Section 2.8, *provided*, *however*, that any such Option Cancellation Agreement delivered to the Paying Agent prior to the Closing shall be held in escrow by the Paying Agent, pending the consummation of the Closing, and shall be deemed to be delivered upon the Closing, subject to the terms and conditions set forth in such Option Cancellation Agreement. Notwithstanding anything in this Agreement to the contrary, no holder of Company Stock Options will be entitled to be paid any Option Merger Consideration unless and until such holder shall have complied with the requirements set forth in Section 2.10.3, including due execution and delivery to the Paying Agent by such holder of the Option Cancellation Agreement, which constitutes an integral component of and limitation on the Option Merger Consideration.

2.11. **Shareholders' Representative**.

2.11.1. By signing a Written Consent or voting in favor of or consenting to the Merger, the approval of the principal terms of the Merger, the consummation of the Merger and receiving the benefits thereof, including the right to receive the consideration payable in connection with the Merger, or by surrendering or delivering to the Paying Agent (i) a Certificate or an affidavit in lieu thereof (with respect to holders of Company Capital Stock) or (ii) an executed Option

Cancellation Agreement (with respect to holders of Vested Company Stock Options), in each case, in exchange for the consideration to be paid in accordance with this Agreement, each Company Holder irrevocably approves the appointment of, and hereby irrevocably appoints Shareholder Representative Services LLC as the sole, exclusive, true and lawful agent, representative and attorney-in-fact of all Company Holders and each of them (the "**Shareholders' Representative**") with respect to any and all matters relating to, arising out of, or in connection with, this Agreement and the agreements ancillary hereto, including for purposes of taking any action or omitting to take any action on behalf of Company Holders hereunder to:

(a) act for Company Holders with regard to all matters pertaining to indemnification under this Agreement, including the power to defend, compromise, or settle any claims and to otherwise prosecute or pursue any litigation claims, and the payment or non-payment of any of the Indemnification Escrow Amount;

(b) execute and deliver all amendments, waivers, ancillary agreements, certificates and documents that the Shareholders' Representative deems necessary or appropriate in connection with the consummation of the transactions contemplated by this Agreement;

(c) do or refrain from doing any further act or deed on behalf of Company Holders that the Shareholders' Representative deems necessary or appropriate in its discretion relating to the subject matter of this Agreement as fully and completely as Company Holders could do if personally present;

(d) give or receive notices to be given or received by Company Holders under this Agreement (except to the extent that this Agreement expressly contemplates that any such notice shall be given or received by each Company Holder individually);

(e) receive service of process in connection with any claims under this Agreement;

(f) give any written direction to the Paying Agent or the Escrow Agent;

(g) agree to, negotiate and/or comply with the determination of the Working Capital and the adjustment pursuant to Section 2.13; and

(h) agree to, negotiate, enter into settlements and compromises and/or comply with awards and court orders with respect to claims for indemnification; and

All actions, notices, communications and determinations by or on behalf of Company Holders shall be given or made by the Shareholders' Representative and all such actions, notices, communications and determinations by the Shareholders' Representative shall conclusively be deemed to have been authorized by, and shall be binding upon, any of and all Company Holders, and no Company Holder shall have the right to object, dissent, protest or otherwise contest the same. All decisions and actions of the Shareholders' Representative on behalf of the Company Holders shall be deemed to be facts ascertainable outside of this Agreement.

2.11.2. The Shareholders' Representative may resign at any time. If the Shareholders' Representative becomes unable to perform its responsibilities hereunder or resigns, then holders of a majority of the Company Capital Stock, based on their Pro Rata Percentage, promptly shall designate in writing to Buyer a single individual to fill the Shareholders' Representative vacancy as the successor Shareholders' Representative hereunder. If at any time there shall not be a Shareholders' Representative or Company Holders fail to designate a successor Shareholders' Representative, then Buyer may have a court of competent jurisdiction appoint a Shareholders' Representative hereunder. Holders of a majority of the Company Capital Stock, based on their Pro Rata Percentage, may also replace the Person serving as the Shareholders' Representative from time to time and for any reason upon at least ten days' prior written notice to Buyer. The Shareholders' Representative may be removed only upon delivery of written notice to the Buyer signed by Persons who, as of immediately prior to the Effective Time, held a majority (by voting power) of the then outstanding shares of Company Capital Stock.

2.11.3. The Shareholders' Representative shall act for Company Holders on all of the matters set forth in this Agreement in the manner the Shareholders' Representative believes to be in the best interest of Company Holders. The Shareholders' Representative is authorized to act on behalf of Company Holders notwithstanding any dispute or disagreement among Company Holders. In taking any actions as Shareholders' Representative, the Shareholders' Representative may rely conclusively, without any further inquiry or investigation, upon any certification or confirmation, oral or written, given by any Person the Shareholders' Representative reasonably believes to be authorized thereunto. The Shareholders' Representative will incur no liability of any kind with respect to any action or omission by the Shareholders' Representative in connection with the Shareholders' Representative's services pursuant to this Agreement and any agreements ancillary hereto, except in the event of liability directly resulting from the Shareholders' Representative's gross negligence or willful misconduct. The Shareholders' Representative shall not be liable for any action or omission pursuant to the advice of counsel. The Company Holders will indemnify, defend and hold harmless the Shareholders' Representative from and against any and all losses, liabilities, damages, claims, penalties, fines, forfeitures, actions, fees, costs and expenses (including the fees and expenses of counsel and experts and their staffs and all expense of document location, duplication and shipment) (collectively, "**Representative Losses**") arising out of or in connection with the Shareholders' Representative's execution and performance of this Agreement and any agreements ancillary hereto, in each case as such Representative Loss is suffered or incurred; provided, that in the event that any such Representative

Loss is finally adjudicated to have been directly caused by the gross negligence or willful misconduct of the Shareholders' Representative, the Shareholders' Representative will reimburse the Company Holders the amount of such indemnified Representative Loss to the extent attributable to such gross negligence or willful misconduct; provided, further, that in no event shall a Company Holder be liable under this Agreement or otherwise in connection with the transactions contemplated hereby or in connection therewith for any Representative Losses in excess of the Merger Consideration and Option Merger Consideration actually paid, or that becomes due and payable in accordance with Section 2.14, to him, her or it. If not paid directly to the Shareholders' Representative by the Company Holders, any such Representative Losses may be recovered by the Shareholders' Representative from (i) the funds in the Shareholders' Representative Reserve, (ii) the Adjustment Escrow Fund and the Indemnification Escrow Fund, in each case at such time as remaining amounts would otherwise be distributable to the Company Holders and (iii) any future Contingent Payments that become due and payable in accordance with Section 2.14; provided, that while this section allows the Shareholders' Representative to be paid from the aforementioned sources of funds, this does not relieve the Company Holders from their obligation to promptly pay such Representative Losses as they are suffered or incurred, nor does it prevent the Shareholders' Representative from seeking any remedies available to it at law or otherwise. In no event will the Shareholders' Representative be required to advance its own funds on behalf of the Company Holders or otherwise. Notwithstanding anything in this Agreement to the contrary, any restrictions or limitations on liability or indemnification obligations of, or provisions limiting the recourse against non-parties otherwise applicable to, the Company Holders set forth elsewhere in this Agreement are not intended to be applicable to the indemnities provided to the Shareholders' Representative under this section. The foregoing indemnities will survive the Closing, the resignation or removal of the Shareholders' Representative or the termination of this Agreement.

2.11.4. The Shareholders' Representative shall treat confidentially any Confidential Information of the Buyer or the Surviving Corporation disclosed to it pursuant to this Agreement and shall not use such Confidential Information other than in the performance of its duties as the Shareholders' Representative. In addition, the Shareholders' Representative shall not disclose any Confidential Information disclosed to it pursuant to this Agreement to anyone except as required by Applicable Law; *provided* that (i) the Shareholders' Representative may disclose such Confidential Information to legal counsel, employees, advisors, agents or consultants, in each case who have a need to know such information, provided that such persons are subject to confidentiality obligations with respect thereto no less restrictive than the obligations set forth in Section 6.10 of this Agreement, (ii) the Shareholders' Representative (or legal counsel, employees, advisors, agents or consultants to whom Confidential Information is disclosed pursuant to clause (i) above) may disclose such Confidential Information in any Action relating to this Agreement or the transactions contemplated hereby (or, in either case, discussion in preparation therefor) and (iii) the Shareholders' Representative may disclose to any Company Holder any such Confidential Information disclosed to the Shareholders' Representative subject to such Company Holder agreeing with Buyer in writing to restrictions on the disclosure and use of such Confidential Information consistent with or no less stringent than the restrictions to which the Shareholders' Representative is subject pursuant to this Section 2.11.4.

2.11.5. Buyer shall be entitled to rely on the authority of the Shareholders' Representative as the agent, representative and attorney-in-fact of Company Holders for all purposes under this Agreement and shall have no Liability for any such reliance. No Company Holder may revoke the authority of the Shareholders' Representative. Each Company Holder, by signing a Written Consent or otherwise voting in favor of or consenting to the Merger or by surrendering or delivering a Certificate or an affidavit in lieu thereof to the Paying Agent along with an executed Letter of Transmittal (with respect to holders of Company Capital Stock) or by delivering an executed Option Cancellation Agreement (with respect to holders of Company Stock Options), in each case, in exchange for the consideration to be paid in accordance with this Agreement, hereby ratifies and confirms, and hereby agrees to ratify and confirm, any action taken by the Shareholders' Representative in the exercise of the power-of-attorney granted to the Shareholders' Representative pursuant to this Section 2.11, which power-of-attorney, being coupled with an interest, is irrevocable and shall survive the death, incapacity or incompetence of such Company Holder. The provisions of this Section 2.11 are independent and severable, are irrevocable (subject only to Section 2.11.2) and coupled with an interest and shall be enforceable notwithstanding any rights or remedies that any Company Holder may have in connection with the transactions contemplated by this Agreement.

2.11.6. At the Closing, the Paying Agent shall distribute the Shareholders' Representative Reserve to the Shareholders' Representative, which shall be maintained by the Shareholders' Representative in a segregated account for paying directly or reimbursing the Shareholders' Representative for any third party expenses in performing the obligations and exercising the rights of the Shareholders' Representative hereunder or under any agreements ancillary hereto. The Shareholders' Representative will hold these funds separate from its corporate funds, will not use these funds for its operating expenses or any other corporate purposes and will not voluntarily make these funds available to its creditors in the event of bankruptcy. Company Holders shall not receive interest or other earnings on the Shareholders' Representative Reserve and Company Holders irrevocably transfer and assign to the Shareholders' Representative any ownership right that they may otherwise have had in any interest that may accrue on funds held in the Shareholders' Representative Reserve. Company Holders acknowledge that the Shareholders' Representative is not providing any investment supervision, recommendations or advice. The Shareholders' Representative shall have no responsibility or liability for any loss of principal of the Shareholders' Representative Reserve other than as a result of its gross negligence or willful misconduct. For Tax purposes, the Shareholders' Representative Reserve shall be treated as having been received and voluntarily set aside by Company Holders at the time of Closing. The Shareholders' Representative shall be reimbursed for out-of-pocket expenses incurred in the performance of its duties (including the reasonable fees

and expenses of counsel) under this Agreement from the Shareholders' Representative Reserve; *provided* that if the Shareholders' Representative Reserve is insufficient to pay such expenses, then the Shareholders' Representative shall be reimbursed directly from Company Holders on a several basis (and not a joint and several basis) according to their Pro Rata Percentage. Upon the determination of the Shareholders' Representative that the Shareholders' Representative Reserve is no longer necessary in connection with claims for indemnification of the Shareholders' Representative pursuant to this Section 2.11, the Shareholders' Representative shall distribute to the Paying Agent for further distribution to the Company Holders (solely out of the Shareholders' Representative Reserve) the amount remaining in the Shareholders' Representative Reserve after payment of all of the Shareholders' Representative's out-of-pocket expenses incurred in connection with its services as Shareholders' Representative. The Shareholders' Representative Reserve shall not be available to Buyer to satisfy any claims hereunder. Any payments as may be required by the Shareholders' Representative to be made directly to it by any Company Holders pursuant to this Agreement or any other agreement shall be paid in accordance with such Company Holder's Pro Rata Percentage.

2.11.7. The provisions of this Section 2.11 shall be binding upon the executors, heirs, legal representatives, personal representatives, successor trustees and successors of each Company Holder, and any references in this Agreement to a Company Holder shall mean and include the successors to the rights of each applicable Company Holder hereunder, whether pursuant to testamentary disposition, the laws of descent and distribution or otherwise.

2.12. **Close of Stock Transfer Books**. At the Effective Time, the stock transfer books of the Company shall be closed and thereafter there shall be no further registration of transfers of shares of Company Capital Stock on the records of the Company. From and after the Effective Time, no shares of Company Capital Stock issued and outstanding immediately prior to the Effective Time shall be deemed to be outstanding, and the holders of shares of Company Capital Stock immediately prior to the Effective Time shall cease to have any rights with respect to such shares, except as otherwise provided herein or by Applicable Law.

2.13. **Working Capital Adjustment**.

2.13.1. The Closing Payment shall be adjusted by an amount (the "**Closing Working Capital Adjustment**") equal to any Positive Working Capital Adjustment or any Negative Working Capital Adjustment, as applicable, as set forth in this Section 2.13.1. At least four Business Days prior to the Closing Date, the Company shall provide a statement that sets forth its good faith calculation of the Working Capital of the Company as of the close of business on the day immediately prior to the Closing Date (except that Pre-Closing Tax Liabilities shall be determined as of the end of the day on the Closing Date) (the "**Estimated Closing Date Working Capital**"), which shall be determined in accordance with GAAP (except to the extent otherwise provided in the definition of Working Capital), applied in a manner consistent with the preparation, assumptions and estimates made or used in the preparation of the Working Capital Exhibit. In the event the Estimated Closing Date Working Capital is a negative amount, the Closing Payment shall be reduced by the absolute value of such amount (the "**Negative Working Capital Adjustment**"). In the event the Estimated Closing Date Working Capital is a positive amount, the Closing Payment shall be increased by an amount equal to the absolute value of such amount (the "**Positive Working Capital Adjustment**"). Following Buyer's receipt of the statement setting forth the Estimated Closing Date Working Capital, the Company shall provide to Buyer and Merger Sub, and their authorized representatives, reasonable access to all records used in preparing such Estimated Closing Date Working Capital (and employees of the Company who can adequately answer questions on the Estimated Closing Date Working Capital, including such access to facilities as is reasonably necessary to have such access to such employees) and, if applicable, the Company's outside accountants and their work papers and other documents used in preparing such Estimated Closing Date Working Capital. No later than [*] after the Closing Date, Buyer shall prepare or cause to be prepared and delivered to the Shareholders' Representative a statement setting forth Buyer's good faith calculation of the Working Capital of the Company as of the close of business on the day immediately prior to the Closing Date (the "**Buyer's Closing Date Working Capital Calculation**"), which shall be determined in accordance with GAAP (except to the extent otherwise provided in the definition of Working Capital), applied in a manner consistent with the preparation, assumptions and estimates made or used in the preparation of the Working Capital Exhibit.

2.13.2. If Buyer does not deliver the Buyer's Closing Date Working Capital Calculation as set forth above, then the Estimated Closing Date Working Capital shall be deemed for all purposes of this Agreement to be the Buyer's Closing Date Working Capital Calculation. The Shareholders' Representative may provide a written notice to Buyer of any disagreement with respect to the Buyer's Closing Date Working Capital Calculation within [*] after delivery of Buyer's Closing Date Working Capital Calculation to the Shareholders' Representative. If the Shareholders' Representative provides such a notice, the Shareholders' Representative and Buyer will attempt in good faith to resolve such disagreement. If, within [*] after delivery to Buyer of such notification by the Shareholders' Representative, they are unable to resolve such disagreement, either Buyer, on the one hand, or the Shareholders' Representative, on the other hand, shall have the right to submit the determination of such matter to an accounting firm of nationally recognized independent public accountants reasonably acceptable to each of Buyer and the Shareholders' Representative, or, in the absence of mutual agreement, Deloitte LLP (the "**Auditor**"). Each Party agrees to execute a reasonable engagement letter, and all fees and expenses relating to the work performed by the Auditor shall be shared equally between Buyer and the Shareholders' Representative (on behalf of the Company Holders); provided, that if the Auditor determines that either the Shareholders' Representative or the Buyer has adopted a position or positions with respect to the Working Capital that is frivolous or clearly without merit, the Auditor (a) may, in its discretion, assign a greater portion of any such fees and expenses to the Shareholders' Representative (on behalf of the Company Holders) or the Buyer, as applicable, and (b) shall provide to the Shareholders' Representative and the Buyer a written explanation of its reasons

for making such a determination. The Auditor shall not be authorized or permitted to: (x) determine any questions or matters whatsoever under or in connection with this Agreement except for the resolution of differences between the Shareholders' Representative and the Buyer regarding the determination of the Working Capital in accordance with this Section 2.13; or (y) apply any accounting principles, policies, methods, treatments or procedures other than those used in the preparation of the Working Capital Exhibit and required by Applicable Law. In all cases, the Auditor shall act as an expert and not as arbitrator. Within [*] after the selection of the Auditor, the Auditor shall make a determination of all issues in dispute in connection with the Buyer's Closing Date Working Capital Calculation pursuant to such procedures as the Auditor deems fair and reasonable and shall set forth in a written statement delivered to Buyer and the Shareholders' Representative the final Closing Working Capital Adjustment; *provided however*, such final Closing Working Capital Adjustment shall be an amount equal to either the Closing Working Capital Adjustment that was based on the Buyer's Closing Date Working Capital Calculation or the Company's Estimated Closing Date Working Capital or an amount in between. Such determination shall be final, conclusive and binding on the Parties absent fraud or manifest error. The amount equal to the difference of the final Closing Working Capital Adjustment determined in accordance with this Section 2.13.2 less the Closing Working Capital Adjustment, if any, made pursuant to Section 2.13.1 is referred to herein as the "**Final Closing Working Capital Adjustment Amount**". If the Final Closing Working Capital Adjustment Amount is a negative amount, then Buyer shall be entitled to prompt payment from the Adjustment Escrow Fund of the absolute value of such amount; *provided* that if the Adjustment Escrow Amount is less than the amount to be paid to Buyer, then Buyer shall be entitled to receive such excess amount from the Indemnification Escrow Fund. If the Final Closing Working Capital Adjustment Amount is a positive amount, then Buyer shall promptly pay the Paying Agent, for distribution to the Company Holders or to the Surviving Corporation for amounts to be paid through payroll, according to the applicable percentages set forth on Schedule I, such amount due to them, if any.

2.13.3. Following the Shareholders' Representative's receipt of the statement setting forth Buyer's Closing Date Working Capital Calculation, the Buyer and its Affiliates, including the Surviving Corporation, shall provide to the Shareholders' Representative, and its authorized representatives, reasonable access to all records used in preparing such Buyer's Closing Date Working Capital Calculation (and employees of the Buyer or its Affiliates, including the Surviving Corporation, who can adequately answer questions on Buyer's Closing Date Working Capital Calculation).

2.13.4. Other than in the case of Fraud, the Parties agree that the procedures set forth in this Section 2.13 shall be the sole and exclusive method for resolving any disputes with respect to the determination of the Working Capital and the Final Closing Working Capital Adjustment Amount; provided, that this provision shall not prohibit the Buyer or the Shareholders' Representative from instituting litigation to enforce a ruling of the Auditor.

2.14. **Contingent Payments**.

2.14.1. In addition to the Closing Payment payable pursuant to Section 2.7.3(a), Company Holders shall be entitled to certain additional contingent payments from Buyer after the Closing as and to the extent set forth in this Section 2.14 (each such additional payment, a "**Contingent Payment**"), subject to all the terms and conditions of this Section 2.14.

2.14.2. Buyer shall make the Contingent Payments described below in cash to the Paying Agent subject to and upon the occurrence of the following events set forth in the table below (each of such twelve (12) events, a "**Milestone**"), whether achieved by or on behalf of Buyer, the Surviving Corporation, or any of their respective Affiliates, or any Buyer Rights Successor, less any applicable Contingent Payment Deal Fees. The Paying Agent shall distribute such amounts to the Company Holders, as set forth in Schedule I, less (without duplication) any applicable Contingent Payment Deal Fees, with such disbursements paid through the payroll process of the Surviving Corporation or through the Paying Agent, as applicable, *provided, however*, that (a) with respect to any Deferred Holder (other than the [*] and the Designated Individuals), the Deferred Consideration of such Deferred Holder shall be payable only to the extent and in accordance with Schedule I or (b) with respect to any Deferred Holder that is a Designated Individual, such Deferred Holder's Designated Individual Agreement, and, in each case, any such amounts to which a Deferred Holder does not become entitled shall be retained by Buyer:

No.	**Milestone**	**Products for the Treatment of DMD**			**Product for the Treatment of DM1**
		First Product Targeting [*]	**First Product Targeting** [*]	**First Product Targeting** [*]	
1.	Initiation of a Clinical Trial for a Product	[*]	[*]	[*]	[*]
2.	Initiation of a Pivotal Trial for a Product	[*]	[*]	[*]	[*]
3.	With respect to a Product, the earlier of (a) receipt of Marketing Approval in the U.S., and (b) (i) receipt of Marketing Approval from (A) the European Commission or (B) the	[*]	[*]	[*]	[*]

	applicable Regulatory Authority [*] and (ii) Price Approval [*].				

2.14.3. For the purposes of the Milestones above, [*].

2.14.4. Each Contingent Payment is payable only once. In no event shall any of the Contingent Payments be paid more than once, regardless of the number of times the corresponding Milestone is achieved by or on behalf of Buyer, Surviving Corporation or any of their respective Affiliates, or any Buyer Rights Successor. In the event that (a) the first Clinical Trial that is Initiated for a Product is also a Pivotal Trial for such Product, then both Milestone No. 1 and Milestone No. 2 shall be payable on the Initiation of such Clinical Trial, (b) at the time a Clinical Trial for a Product is Initiated, such Clinical Trial is not a Pivotal Trial, the Pivotal Trial for such Product shall be deemed to have occurred on the date on which an Approval Application is filed in respect of a Product with the appropriate Regulatory Authority in any country or jurisdiction and (c) Milestone No. 3 is achieved then Milestone No. 1 and Milestone No. 2 shall be payable upon such achievement of Milestone No. 3 to the extent not previously paid. [*].

2.14.5. In the event of an Insolvency Event prior to the expiration of Buyer's obligations set forth in Section 2.14.2, all Contingent Payments will be deemed to have been paid and a promissory note therefor issued by Buyer to the Shareholders' Representative (to be held solely on behalf of the Company Holders and in its capacity as the Shareholders' Representative) in the amount of such Contingent Payments 91 days prior to such Insolvency Event.

2.14.6. Commencing on the Closing Date and continuing until the earlier to occur of (i) expiration of Buyer's obligations set forth in Section 2.14.9 and (ii) achievement of the last Milestone, Buyer shall provide the Shareholders' Representative, within [*] following January 1st of each calendar year, with a written report summarizing in reasonable detail the status of the development of each Product with respect to which a Contingent Payment remains unpaid. Upon the Shareholders' Representative's reasonable request and in a frequency of no more than once per calendar year, representatives of Buyer that are familiar with the development status of each such Product shall meet with the Shareholders' Representative in person, by phone or as otherwise may be mutually agreed, to discuss the development status of each such Product in reasonable detail. Notwithstanding Section 6.10, Buyer, Merger Sub and their respective Affiliates each agree that the Shareholders' Representative may disclose the information disclosed hereunder to each Company Holder, and any Company Holder may disclose such information to any limited partners of such Company Holder subject to customary confidentiality obligations no less restrictive than the obligations set forth in Section 6.10 of this Agreement.

2.14.1. Within [*] of the occurrence of any Milestone set forth in Section 2.14.2, Buyer shall provide written notice to the Shareholders' Representative that such Milestone has occurred. Within [*] after the occurrence of a Milestone, Buyer shall pay, or shall cause to be paid, to the Paying Agent for distribution to the Company Holders or to the Surviving Corporation for amounts to be paid through payroll an aggregate amount in cash equal to the amount of the applicable Contingent Payment in accordance with this Section 2.14.

2.14.2. Subject to the terms and conditions of (a) with respect to Deferred Holders (other than the [*] and the Designated Individuals), Schedule I or (b) with respect to Deferred Holders that are Designated Individuals, such Deferred Holder's Designated Individual Agreement, each Company Holder shall be entitled to receive only the portion of any Contingent Payment as set forth in Schedule I (less such Company Holder's Pro Rata Percentage of any applicable Contingent Payment Deal Fees) once such Contingent Payment becomes due and payable in accordance with this Section 2.14.

2.14.3. No interest shall accrue or be paid on any portion of any Contingent Payment, except as otherwise expressly provided herein. For Tax purposes, however, the Parties agree that all payments made under this Section 2.14 (other than to Designated Individuals) shall to the extent permitted by Applicable Law be reported as additional Merger Consideration or Option Merger Consideration, as applicable, except to the extent such amounts are characterized as interest for Tax purposes.

2.14.4. Following the Closing and continuing until the [*] of the Closing Date, Buyer shall, and shall cause its Affiliates (including the Surviving Corporation) and any Buyer Rights Successor to, use Commercially Reasonable Efforts to achieve each of the Milestones. Subject to the foregoing obligation to use Commercially Reasonable Efforts, neither Buyer, Merger Sub nor any of their respective Affiliates has furnished or provided any assurances regarding the achievability of the condition to the payment of the Contingent Payments set forth in this Section 2.14 or the likelihood thereof.

2.14.5. With respect to Contingent Payments made in respect of Designated Company Restricted Stock, Contingent Payments shall only be made to the extent such Designated Company Restricted Stock would be vested pursuant to the terms of the Designated Company Restricted Stock agreement entered into between the Company and such Deferred Holder in respect of such Designated Company Restricted Stock as set forth in Schedule I and any such amounts to which a Deferred Holder does not become entitled shall be retained by Buyer. If any Contingent Payments become payable hereunder before the Designated Company Restricted Stock would have vested, such payments shall not be made unless and until the corresponding Designated Company Restricted Stock would have vested. If a holder of Designated Company Restricted Stock is terminated following Closing and, as a result of such termination, would have forfeited his or her Designated Company Restricted Stock, Buyer will repay to such Deferred Holder the lesser of (x) the original purchase price set forth in Schedule I, or (y) the then fair market value of such forfeited Designated Company Restricted

Stock, in each case, as provided pursuant to the terms of the Designated Company Restricted Stock agreement. In such case, any Contingent Payments related to Designated Company Restricted Stock that would have been vested by its terms as of such termination will continue to be paid subject to the terms of this Section 2.14.

2.14.6. With respect to Contingent Payments made in respect of Vested Company Stock Options or Company Restricted Stock with respect to which a valid election under Section 83(b) of the Code has not been made, no payments shall be made following the 5th anniversary of the Closing unless the applicable Milestone to which such Contingent Payment relates constitutes a short-term deferral within the meaning of Section 409A of the Code, with any such payments that are made following the 5th anniversary of the Closing to be paid within the time period required so that such payments remain short-term deferrals.

2.14.7. After the Closing, no Company Holder may sell, exchange, transfer or otherwise dispose of his, her or its right to receive any portion of any Contingent Payments that becomes due and payable to such Company Holder in respect of such Company Holder's Company Capital Stock in accordance with this Section 2.14, other than (i) upon death by will or intestacy; (ii) by instrument to an inter vivos or testamentary trust in which the right to receive any Contingent Payments or any portion thereof is to be passed to beneficiaries upon the death of the trustee; (iii) made pursuant to a court order; (iv) made by operation of law (including a consolidation or merger) or without consideration in connection with the dissolution, liquidation or termination of any corporation, limited liability company, partnership or other entity; (v) in the case of Contingent Payments payable to a nominee, from a nominee to a beneficial owner (and, if applicable, through an intermediary) or from such nominee to another nominee for the same beneficial owner, in each case as allowable by a nationally recognized trust company; or (vi) to any Person, with Buyer's consent. Any transfer in violation of this Section 2.14.13 shall be null and void and shall not be recognized by Buyer or the Surviving Corporation.

2.14.8. Any payments or portions thereof due hereunder that are not paid when due will accrue interest from the date due until paid at an annual rate equal to the lower of [*].

2.15. **Escrow**.

2.15.1. In connection with the Closing, Buyer, the Shareholders' Representative and the Escrow Agent shall have executed and delivered an escrow agreement, in a form mutually agreed upon between such parties (the "**Escrow Agreement**"), under which SunTrust Bank shall act as escrow agent (the "**Escrow Agent**") with respect to (a) an escrow fund into which the Adjustment Escrow Amount is deposited (the "**Adjustment Escrow Fund**") for the purpose of securing payment of any adjustments to the Working Capital in accordance with Section 2.13.2 and an escrow fund into which the Indemnification Escrow Amount is deposited (the "**Indemnification Escrow Fund**") for the purpose of securing the payment of the Company Holders' indemnification obligations pursuant to ARTICLE 8. The Parties will, to the extent consistent with Applicable Law, treat the Adjustment Escrow Fund and the Indemnification Escrow Fund and any earnings thereon as owned by Buyer for Tax purposes.

2.15.2. Following the determination of the Final Closing Working Capital Adjustment Amount and payment of any amounts due to Buyer pursuant to Section 2.13.2 in accordance with the Escrow Agreement, the Escrow Agent shall make available to (i) the Surviving Corporation with respect to amounts (A) to be paid through payroll and (B) which represent Escrow Release Tax Costs or (ii) the Paying Agent for distribution to the Company Holders of the then-remaining Adjustment Escrow Amount, and each of the Surviving Corporation and the Paying Agent, as applicable, shall pay each Company Holder its Upfront Payment Pro Rata Percentage of the then-remaining Adjustment Escrow Amount (after appropriate reduction for any applicable Escrow Release Tax Costs).

2.15.3. Upon the termination of the Indemnification Escrow Fund on the Escrow Termination Date in accordance with the Escrow Agreement, the Escrow Agent shall make available to (i) the Surviving Corporation with respect to amounts (A) to be paid through payroll and (B) which represent Escrow Release Tax Costs or (ii) the Paying Agent for distribution to the Company Holders of the then-remaining Indemnification Escrow Amount, and each of the Surviving Corporation and the Paying Agent, as applicable, shall disburse to the Company Holders the then-remaining Indemnification Escrow Amount released in accordance with Section 8.11 (after appropriate reduction, if any, pursuant to Section 8.4.4 or for any applicable Escrow Release Tax Costs).

2.15.4. The execution of a Written Consent or the adoption of this Agreement and the approval of the transactions contemplated hereby, including the Merger, by the Company Shareholders shall constitute approval of the Escrow Agreement and all arrangements related thereto, including the depositing of the Adjustment Escrow Amount into the Adjustment Escrow Fund and the Indemnification Escrow Amount into the Indemnification Escrow Fund. Any interest accruing with respect to the Adjustment Escrow Fund or the Indemnification Escrow Fund shall be deemed part of the Adjustment Escrow Amount or the Indemnification Escrow Amount, respectively, for all indemnification and escrow disbursement purposes hereunder. The right of any Company Holder to receive its portion of the Adjustment Escrow Fund and the Indemnification Escrow Fund, if any, (i) is an integral part of the Merger Consideration and Option Merger Consideration, as applicable, provided for in this Agreement, (ii) does not give the Company Holders dividend rights, voting rights, liquidation rights, preemptive rights or other rights of holders of capital stock of the Company, (iii) shall not be evidenced by a certificate or other instrument, (iv) shall not be assignable or otherwise transferable by such Company Holder, except in the manner as provided for Contingent Payments set forth in Section 2.14.11, and (v) does not represent any right other than the right to receive the consideration set forth in this Section 2.15. Any attempted

transfer of the right to any portion of the Adjustment Escrow Amount or the Indemnification Escrow Amount by any holder thereof (other than as specifically permitted by the immediately preceding sentence) shall be null and void.

2.16. **Dissenting Shares**.

2.16.1. Notwithstanding anything in this Agreement to the contrary, any shares of Company Capital Stock outstanding immediately prior to the Effective Time and held by a Company Shareholder who has not voted in favor of the Merger, consented thereto in writing or otherwise contractually waived its rights to appraisal and who has exercised and perfected appraisal or dissenters rights for such shares in accordance with Section 262 of the DGCL and has not effectively withdrawn or lost such appraisal or dissenters rights (collectively, the "**Dissenting Shares**") shall not be converted into or represent the right to consideration for Company Capital Stock set forth in Section 2.7 and the holder or holders of such shares shall be entitled only to such rights as may be granted to such holder or holders in Section 262 of the DGCL.

2.16.2. At the Effective Time, the Dissenting Shares shall no longer be outstanding and shall automatically be cancelled and shall cease to exist, and each holder of Dissenting Shares shall cease to have any rights with respect thereto, except the right to receive the appraised value of such shares in accordance with the provisions of Section 262 of the DGCL. Notwithstanding the provisions of Section 2.16.1, if any holder of Dissenting Shares shall effectively withdraw or lose (through failure to perfect or otherwise) such holder's appraisal rights and dissenters rights under Section 262 of the DGCL, or a court of competent jurisdiction shall determine that such holder is not entitled to relief provided under Section 262 of the DGCL, then, as of the later of the Effective Time and the occurrence of such event, such holder's shares of Company Capital Stock shall automatically be converted into and represent only the right to receive the consideration for Company Capital Stock set forth in Section 2.7, without interest, following surrender of the Certificate representing such shares in the manner provided in Section 2.10 or, in the case of a lost, stolen, mutilated, defaced or destroyed Certificate, upon delivery of the documents, if required, described in Section 2.10. The Company shall give Buyer prompt notice of any written demands for appraisal, withdrawals of demands for appraisal and any other related instruments served pursuant to the DGCL and received by the Company, and Buyer shall have the right to participate in and direct all negotiations and proceedings with respect to such demands. The Company shall not, except with the prior written consent of Buyer, make any payment with respect to any demand for appraisal or settle or offer to settle any such demand.

2.17. **Withholding**. Notwithstanding anything to the contrary hereunder, (i) Buyer, Merger Sub, the Paying Agent, the Escrow Agent, the Company, the Surviving Corporation and any other applicable withholding agent shall be entitled to deduct and withhold, or cause to be deducted and withheld, from any portion of any payment payable pursuant to or as contemplated by this Agreement, the [*] Deferred Consideration Agreement, the Deferred Consideration Acknowledgments, the Designated Individual Agreements, the Paying Agent Agreement or the Escrow Agreement such Taxes or other amounts as it is required to deduct and withhold with respect to the making of such payment under the Code or any provision of applicable Tax Laws, and (ii) any compensatory amounts payable pursuant to or contemplated by this Agreement, the [*] Deferred Consideration Agreement, the Deferred Consideration Acknowledgments, the Designated Individual Agreements, the Paying Agent Agreement or the Escrow Agreement shall be remitted to the Company or Surviving Corporation for payment to the applicable recipient through regular payroll procedures, as applicable. To the extent that any amounts are so deducted or withheld, such amounts will be treated for all purposes of this Agreement and the Escrow Agreement as having been paid to the Person in respect of which such deduction and withholding was made, and will be timely remitted to the applicable Taxing Authority. Notwithstanding the foregoing, Buyer confirms that it will not, absent a change in Applicable Law, [*] (y) the Company has provided a valid certificate and notice pursuant to Treasury Regulations Section 1.897-2(h) in accordance with Section 3.2.4 of this Agreement.

ARTICLE 3
CLOSING CONDITIONS

3.1. **Conditions to the Obligations of Each Party to Effect the Merger**. The obligation of each Party to effect the Merger is subject to the satisfaction or waiver on or prior to the Closing Date of the following conditions:

3.1.1. **Antitrust**. Any waiting period (or extension thereof) applicable to the Merger under the HSR Act shall have been terminated or shall have expired.

3.1.2. **No Injunction or Legal Restraint**. No temporary restraining order, preliminary or permanent injunction or other Judgment entered into or issued by any Governmental Authority (other than any such Judgments entered into or issued due to any Action commenced by or on behalf of the Company) that has the effect of preventing the consummation of the Merger shall be in effect. There shall not be pending or threatened any Action challenging the transactions contemplated hereby, or seeking to delay, restrain or prohibit the Merger.

3.1.3. **No Actions**. There shall not be pending or threatened by any Governmental Authority any Action (or by any other Person any Action which has a reasonable likelihood of success), (i) seeking to prohibit or limit in any respect, or place any conditions on, the ownership or operation by Buyer, its Affiliates or the Company of the business or assets of Buyer, its Affiliates or the Company, or to compel Buyer, its Affiliates or the Company to divest, dispose of or hold separate any portion of the business or assets of Buyer, its Affiliates or the Company, in each case as a result of the Merger or any of the other transactions contemplated by this Agreement, (ii) seeking to impose limitations on the ability of Buyer or

any of its Affiliates to acquire or hold, or exercise full rights of ownership of, the shares of the Surviving Corporation, including the right to vote such shares on all matters properly presented to the shareholders of the Surviving Corporation, or (iii) seeking to prohibit Buyer or any of its Affiliates from effectively controlling in any respect the business or operations of the Surviving Corporation. No Judgment that could reasonably be expected to result, directly or indirectly, in any of the effects referred to in clauses (i) through (iii) of this Section 3.1.3 shall be in effect.

3.1.4. **Shareholder Approval**. Shareholders representing all outstanding shares of Company Capital Stock (on an as converted basis) immediately prior to the Effective Time shall have signed and delivered Written Consents to the Company and the Company shall have delivered true and accurate copies of such Written Consents to Buyer.

3.2. **Additional Conditions to Buyer's Obligation to Effect the Merger**. The obligation of Buyer and Merger Sub to effect the Merger is subject to the satisfaction or waiver on or prior to the Closing Date of the conditions set forth in Section 2.3 and of the following conditions:

3.2.1. **Compliance Certificate**. The Company shall deliver to Buyer a certificate in the form attached as Exhibit E, dated as of the Closing Date, executed by the Chief Executive Officer and Chief Scientific Officer of the Company, certifying (i) that (A) the representations and warranties of the Company set forth in this Agreement that are Fundamental Representations shall be true and correct in all respects, except for the representations set forth in Section 4.4.1 and the first two sentences of Section 4.4.2 which shall be true and correct in all respects except to the extent of any *de minimis* inaccuracy, and (B) all other representations and warranties of the Company set forth in this Agreement that are not Fundamental Representations shall be true and correct (without giving effect to any limitation as to "materiality" or "Material Adverse Change" or other similar materiality-based limitation set forth therein) in all respects, except where the failure of such representations and warranties to be true and correct would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Change, in each of cases (A) and (B), as of the date of this Agreement and as of the Closing Date with the same effect as though made as of the Closing Date, except that the accuracy of representations and warranties that by terms speak as of a specified date will be determined as of such date in the manner set forth above and (ii) that the Company complied in all material respects with all covenants, obligations and agreements to be performed or complied with by the Company on or before the Closing Date.

3.2.2. **Governmental Consents and Approvals**. The Company shall deliver evidence, in form and substance reasonably satisfactory to Buyer, that all consents of Governmental Authorities required in connection with the Merger, this Agreement and the other transactions contemplated hereby, have been obtained or made, and are in full force and effect.

3.2.3. **Contractual Consents and Approvals**. The Company shall deliver evidence, in form and substance reasonably satisfactory to Buyer, that the Company has obtained all consents and approvals of third parties set forth in Section 3.2.3 of the Disclosure Schedule (other than any such consent or approval under a Contract that has terminated prior to the Closing).

3.2.4. **FIRPTA Certificates**. The Company shall deliver a duly executed certificate, in a form reasonably acceptable to Buyer, dated as of the Closing Date pursuant to Treasury Regulations Section 1.897-2(h) (as described in Treasury Regulations Section 1.1445-2(c)(3)) stating that the Company is not, and has not been during the relevant period specified in Section 897(c)(1)(A)(ii) of the Code, a U.S. real property holding corporation as defined in Section 897 of the Code, together with notice to the IRS as described in Treasury Regulations Section 1.897-2(h)(2).

3.2.5. **No Material Adverse Change**. Since the date of this Agreement, no Material Adverse Change shall have occurred.

3.2.6. **Shareholder Approval**. Shareholders representing all outstanding shares of Company Capital Stock (on an as converted basis) immediately prior to the Effective Time shall have signed and delivered Written Consents to the Company and the Company shall have delivered true and accurate copies of such Written Consents to Buyer.

3.2.7. **Good Standing Certificates**. The Company shall have delivered to Buyer with respect to the Company a certificate of good standing from the Secretary of State of Delaware and any other jurisdictions in which such entity is qualified, which shall be dated no earlier than three Business Days prior to the Closing Date.

3.2.8. **Officer's Certificate**. The Company shall deliver to Buyer a certificate of a duly authorized officer of the Company, dated as of the Closing Date, certifying as to (i) the incumbency of officers of the Company executing documents executed and delivered in connection herewith, (ii) the copies of the Constitutive Documents of the Company each as in effect as of the Closing Date, and (iii) a true and correct copy of the resolutions of the Board of Directors authorizing and approving this Agreement, the Merger and the transactions contemplated herein, in a form reasonably satisfactory to Buyer.

3.2.9. **Discharge of Indebtedness**. With respect to each Person owed any portion of the Debt Payoff Amount for items of Indebtedness described in clauses (i), (ii), (iv), (v), (vi) and (ix) of the definition thereof, the Company shall have received and provided Buyer with copies of payoff letters from such Person(s), each of which shall have been duly executed by such Person(s), in form and substance reasonably satisfactory to Buyer, (i) acknowledging the aggregate principal amount and all accrued but unpaid interest and any applicable prepayment or similar penalties and other fees constituting such Person's portion of the Debt Payoff Amount as of the Closing Date, (ii) agreeing that all payment obligations of the Company to such Person(s) through the Closing Date will be extinguished upon receipt of such portion

of the Debt Payoff Amount on the Closing Date and (iii) agreeing to, if applicable, after receipt of such Debt Payoff Amount, immediately release all Liens related to such Indebtedness and return any possessory or original collateral.

3.2.10. **Escrow Agreement**. The Company shall have delivered to Buyer the Escrow Agreement, duly executed by the Escrow Agent and the Shareholders' Representative.

3.2.11. **Paying Agent Agreement**. The Company shall have delivered to Buyer the Paying Agent Agreement, duly executed by the Paying Agent and the Shareholders' Representative.

3.2.12. [*] **Deferred Consideration Agreement**. The [*] Deferred Consideration Agreement shall not have been terminated or rescinded at or before the Closing and shall remain in effect on the Closing.

3.2.13. **Deferred Consideration Acknowledgments**. None of the Deferred Consideration Acknowledgments have been terminated or rescinded at or before the Closing and each remains in effect on the Closing.

3.2.14. **Designated Individual Agreements**. None of the Designated Individual Agreements have been terminated or rescinded at or before the Closing and each remains in effect on the Closing.

3.2.15. **Restricted Activities Agreements**. Each of the Restricted Activities Agreements have not been terminated or rescinded at or before the Closing and otherwise remain in effect on the Closing.

3.2.16. **Option Cancellation Agreements**. Each of the holders of Company Stock Options have delivered to the Paying Agent an Option Cancellation Agreement with respect to the Company Stock Options held by such holder, duly executed by such holder and Company.

3.3. **Additional Conditions to the Company's Obligation to Effect the Merger**. The obligation of the Company to effect the Merger is subject to the satisfaction or waiver on or prior to the Closing Date of the conditions set forth in Section 2.3 and of the following conditions:

3.3.1. **Compliance Certificate**. Buyer shall deliver to Company a certificate in the form attached as Exhibit F, dated as of the Closing Date, executed by a duly authorized officer of Buyer, certifying (i) that the representations and warranties of Buyer and Merger Sub set forth in this Agreement shall be true and correct (without giving effect to any limitation as to "materiality" or "material adverse effect" or other similar materiality-based limitation set forth therein) in all respects, in each case as of the date of this Agreement and as of the Closing Date with same effect as though made as of the Closing Date (other than representations and warranties that by terms speak as of a specified date, which will be determined as of such date), except for such failures to be true and correct that would not reasonably be expected to have, individually or in the aggregate, a material adverse effect on the ability of Buyer and Merger Sub to consummate the transactions contemplated by this Agreement and (ii) that Buyer and Merger Sub complied in all material respects with all covenants, obligations and agreements of Buyer and Merger Sub to be performed or complied with by Buyer and Merger Sub on or before the Closing Date.

3.3.2. **Escrow Agreement**. Buyer shall have delivered to the Company the Escrow Agreement, duly executed by Buyer.

3.3.3. **Paying Agent Agreement**. Buyer shall have delivered to the Company the Paying Agent Agreement, duly executed by Buyer.

ARTICLE 4
REPRESENTATIONS AND WARRANTIES OF THE COMPANY

The Company represents and warrants to Buyer that except as disclosed by the Company in the Disclosure Schedule delivered on the date hereof, the following statements are true, correct and complete as of the date hereof and as of the Closing Date:

4.1. **Organization and Standing; No Subsidiaries**.

4.1.1. The Company (i) is a corporation duly organized, validly existing and in good standing (in the jurisdictions that recognize the concept of good standing) under the Applicable Laws of the jurisdiction of its incorporation or formation, as the case may be; (ii) has all requisite corporate power and authority to own or lease or otherwise hold and operate its assets and properties and to carry on its business as now being conducted; and (iii) is duly qualified to do business and is in good standing in each jurisdiction in which the nature of its business or the ownership, leasing or operation of its properties makes such qualification necessary (except where such failure to be so qualified would not reasonably be expected to result in a Material Adverse Change), which jurisdictions are listed in Section 4.1.1 of the Disclosure Schedule. The Company has made available to Buyer complete and correct copies of its Constitutive Documents, as amended. The Company has made available to Buyer and its Representatives copies of the stock certificate and transfer books and the minute books of the Company, each of which is true and complete in all material respects and have been maintained in accordance with Applicable Law in all material respects.

4.1.2. The Company has no, and has never had any, Subsidiaries.

4.2. **Power and Authority; Binding Agreement**. Subject to obtaining Shareholder Approval, the Company has all requisite

corporate power and authority to execute and deliver this Agreement and to consummate the Merger and the other transactions contemplated hereby and thereby and to perform its obligations hereunder and thereunder. The execution and delivery by the Company of this Agreement and the consummation by the Company of the Merger and the other transactions contemplated hereby and thereby have been duly authorized by all necessary corporate action on the part of the Company, and no other proceedings on the part of the Company are necessary to authorize this Agreement or to consummate the Merger and the other transactions contemplated hereby other than (a) the Shareholder Approval, (b) the filing of the Certificate of Merger with the office of the Secretary of State of the State of Delaware (c) the filing of a premerger notification and report form under the HSR Act, if necessary, and (d) such other material consents, approvals, orders, authorizations, registrations, declarations, filings and notices set forth on Section 4.2 of the Disclosure Schedule. This Agreement has been duly executed and delivered by the Company and, assuming due authorization, execution and delivery by the other Parties, constitutes a valid, legal and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or similar Applicable Laws affecting creditors' rights generally and general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity).

4.3. **Authorization**.

4.3.1. The Board of Directors, at a meeting duly called and held at which all directors of the Company were present or by written consent, duly and unanimously adopted resolutions (i) approving and declaring advisable the Merger, this Agreement and the other transactions contemplated hereby; (ii) determining that the Merger Consideration is fair to the shareholders of the Company and declaring that the Merger, this Agreement and the other transactions contemplated hereby are in the best interests of the Company's shareholders; (iii) adopting this Agreement; (iv) authorizing the Company to enter into this Agreement and to consummate the Merger and the other transactions contemplated hereby, on the terms and subject to the conditions set forth in this Agreement; (v) directing that the Merger and this Agreement be submitted to the shareholders of the Company for a vote for adopting this Agreement and approving the Merger; and (vi) recommending that the Company's shareholders vote to approve and adopt this Agreement and approve the Merger. Section 203 of the DGCL does not apply to the Company with respect to the Merger, this Agreement or any other transaction contemplated hereby.

4.3.2. The only votes or consent of holders of any class or series of Company Capital Stock necessary to approve and adopt the Merger, this Agreement, the Charter Amendment and the other transactions contemplated hereby are the affirmative votes or consent of (i) a majority of the outstanding shares of Company Common Stock and Company Preferred Stock, voting as a single class on an as-converted basis and (ii) a majority of the outstanding shares of Company Preferred Stock (collectively, the "**Shareholder Approval**").

4.4. **Capitalization**.

4.4.1. Section 4.4.1 of the Disclosure Schedule sets forth the authorized Capital Stock of the Company, including the number of (i) authorized and (ii) issued and outstanding shares of the following: (A) Company Common Stock (separately identifying the number of shares of Company Restricted Stock) and (B) Company Preferred Stock. The rights, preferences, privileges and restrictions of the Company Preferred Stock are as stated in the Company's Amended and Restated Certificate of Incorporation. Section 4.4.1 of the Disclosure Schedule sets forth the number of shares of Company Common Stock: (w) reserved for issuance under the Company Stock Plan, (x) that are subject to issuance upon the exercise of outstanding Company Stock Options, (y) that are issued as Company Restricted Stock that are currently outstanding, and (z) that remain available for future issuance.

4.4.2. Section 4.4.2 of the Disclosure Schedule sets forth a complete and accurate list of the holders of Company Capital Stock, showing the number of shares of such Capital Stock, and the class or series of such shares, held by each such shareholder (the "**Capitalization Table**"). The Company holds no shares of Company Capital Stock in its treasury. All of the issued and outstanding shares of Company Capital Stock have been offered, issued and sold by the Company in compliance with all applicable federal and state securities Applicable Laws. To the knowledge of the Company, the shares of Company Capital Stock owned as of the date hereof by each record holder listed on Section 4.4.2 of the Disclosure Schedule are owned free and clear of all Liens except as specified on Section 4.4.2 of the Disclosure Schedule. Notwithstanding anything to the contrary, the Capitalization Table provided as Section 4.4.2 of the Disclosure Schedule shall be complete and accurate as of the date hereof and as of the Closing Date.

4.4.3. There are no other outstanding options, warrants, rights (including conversion rights, preemptive rights, co-sale rights, rights of first refusal or other similar rights), commitment to grant options, warrants or rights or agreements for the purchase or acquisition from the Company of any shares of Company Capital Stock.

4.4.4. All of the outstanding shares of Company Capital Stock have been duly authorized and validly issued, and are fully paid and nonassessable.

4.4.5. Section 4.4.5 of the Disclosure Schedule sets forth a complete and accurate list of (i) all holders of outstanding Company Stock Options or Company Restricted Stock, indicating, with respect to each Company Stock Option or Company Restricted Stock award, the number of shares of Company Common Stock subject to such Company Stock Option or Company Restricted Stock award, the exercise price or purchase price (if any), the vesting schedule (including any accelerated vesting conditions, including in connection with the transactions contemplated by this Agreement), whether

an election under Section 83(b) of the Code has been filed with respect to the Company Restricted Stock award, whether any Company Stock Option is intended to qualify as an "incentive stock option" under Section 422 of the Code, the date of grant, any modifications to the Company Stock Option or Company Restricted Stock award after the date of grant and the expiration date. The Company has no warrants issued or outstanding or exercisable in respect of any class or series of Company Capital Stock. There is no outstanding Company Stock Option or share of Company Restricted Stock or other equity-based award that has not been granted under the Company Stock Plan. No warrants are owned or otherwise held by any Company Personnel. The Company has provided to Buyer complete and accurate copies of the Company Stock Plan, all Contracts evidencing Company Stock Options and Company Restricted Stock awards and copies of all elections made by holders of Company Restricted Stock under Section 83(b) of the Code. All of the shares of Company Common Stock subject to Company Stock Options will be, upon issuance pursuant to the exercise of such Contracts and Company Stock Options, duly authorized, validly issued, fully paid and nonassessable. There are no options exercisable for any class or series of Company Capital Stock other than Company Common Stock. Each Company Stock Option and shares of Company Restricted Stock (x) were granted in compliance with all Applicable Law and all terms and conditions of the Company Stock Plan and (y) each Company Stock Option has an exercise price per share of Company Common Stock equal to or greater than the fair market value of a share of Company Common Stock, as determined by the Board of Directors in accordance with Section 409A of the Code, on the date of such grant, and is otherwise exempt from the requirements of Section 409A of the Code.

4.4.6. None of the shares of Company Capital Stock have been issued in violation of any subscription, option, call, commitment, right of first refusal, preemptive right, conversion right, Company Stock Option, convertible security or other similar right, or any Contract to which the Company is subject, bound or a party. (i) None of the shares of Company Capital Stock are subject to any subscription, warrant, option, call, commitment, right of first refusal, preemptive right, conversion right or other similar right under any Applicable Law, the Constitutive Documents of the Company, or any Contract to which the Company is subject, bound or a party; (ii) the Company has no obligation (contingent or otherwise) to issue or otherwise sell any subscription, warrant, option, call, commitment, right of first refusal, preemptive right, Company Stock Option, convertible security, "phantom" stock right or other such right, or to issue, distribute or otherwise sell to holders of any shares of its Capital Stock any evidences of Indebtedness or assets of the Company; (iii) except with respect to the Company Restricted Stock, the Company has no obligation (contingent or otherwise) to purchase, redeem or otherwise acquire any shares of Capital Stock, or other equity or voting interest in, the Company or any other Person or to pay any dividend or to make any other distribution in respect of its Capital Stock; (iv) the Company has no obligation (contingent or otherwise) to vote or dispose of any shares of its Capital Stock or other equity or voting interest; and (v) there are no outstanding or authorized stock appreciation rights, phantom stock awards or other rights that are linked in any way to the price of the Company Common Stock or the value of the Company or any part thereof. There are no equity securities of the Company reserved for issuance for any purpose.

4.4.7. There is no Contract between the Company and any holder of its securities, or, to the knowledge of the Company, among any holders of its securities, relating to the sale or transfer (including agreements relating to rights of first refusal, co-sale rights or "drag-along" rights), registration under the Securities Act, or voting, of any Company Capital Stock.

4.4.8. The Company does not directly or indirectly own any equity or similar interest in, or any interest convertible into or exchangeable or exercisable for any equity or similar interest in, any corporation, partnership, limited liability company, joint venture or other business association or entity. There is no Indebtedness that provides its holder with the right to vote on any matters on which shareholders of the Company may vote.

4.4.9. As of the Closing Date, the information in Schedule I provided in accordance with Section 2.3.1(a) is true, correct and complete.

4.5. **Noncontravention**.

4.5.1. Subject to obtaining Shareholder Approval from all holders of Company Capital Stock, the consents set forth on Section 4.5.1 of the Disclosure Schedule, and the filing of the Certificate of Merger with the office of the Secretary of State of the State of Delaware, the execution and delivery by the Company of this Agreement, the consummation of the Merger and the other transactions contemplated hereunder and the compliance by the Company with the provisions of this Agreement, do not and will not conflict with, or result in any violation or breach of, or default (with or without notice or lapse of time or both) under, or give rise to a right of, or result in, termination, cancellation or acceleration of any obligation or to a loss of a material benefit under, or result in the creation of any Lien (other than Permitted Liens) in or upon any of the properties or assets of the Company under, or give rise to any increased, additional, accelerated or guaranteed rights or entitlements under, any provision of (i) the Constitutive Documents of the Company, (ii) any Material Contract or (iii) any Applicable Law, or (iv) any Judgment applicable to the Company or its assets or properties, except in the case of clauses (ii), (iii) and (iv), where such violation, breach, conflict, default, termination, cancellation, acceleration, loss of material benefit, creation of a Lien (other than Permitted Liens), or increased, additional accelerated or guaranteed right or entitlement is immaterial and would not impair in any material respect the ability of the Company to perform its obligations under this Agreement or prevent or materially impede or delay the consummation of the Merger or any of the other transactions contemplated under this Agreement or result in material Liability to the Company, the Buyer or the Surviving Corporation.

4.5.2. No consent, approval, qualification, order or authorization of, registration, declaration or filing with, or notice to, any Governmental Authority is necessary or required by or with respect to the Company in connection with the execution

and delivery by the Company of this Agreement, the consummation by the Company of the Merger and the other transactions contemplated by this Agreement or the compliance by the Company with the provisions of this Agreement, except for (i) the filing of a premerger notification and report form under the HSR Act, and the receipt, termination or expiration, as applicable, of approvals or waiting periods required under the HSR Act or any other applicable competition, merger control, antitrust or similar Applicable Law; and (ii) the filing of the Certificate of Merger with the office of the Secretary of State of the State of Delaware and appropriate documents with the relevant authorities of other states in which the Company is qualified to do business.

4.6. **Compliance with Laws; Regulatory Matters**.

4.6.1. The Company is not in breach or violation of, or default under, its Constitutive Documents. The Company is, and since its formation has been, in material compliance with all Applicable Laws and Judgments of any Governmental Authority applicable to it or to the conduct by the Company of its business, or the ownership or use of any of its assets and properties, including the Leased Properties. The Company has not received, since its formation, a written or, to its knowledge, oral notice or other communication alleging a material violation by the Company of any Applicable Law of any Governmental Authority applicable to its businesses or operations. No event has occurred nor does any circumstance exist that would reasonably be expected to give rise to an obligation on the part of the Company to undertake, or to bear all or any portion of the cost of, any material remedial action of any nature.

4.6.2. The Products are currently and at all times have been researched, developed, tested, labeled, manufactured, stored, imported, exported, promoted, marketed, sold and distributed, as applicable, by the Company, and to the knowledge of the Company, on behalf of the Company and by or on behalf of any Representative of the Company, in compliance in all material respects with all Applicable Laws, including the FD&C Act; the Public Health Service Act ("**PHSA**"); Applicable Laws governing interactions with healthcare professionals; analogous laws promulgated by foreign, federal, state, provincial or local Governmental Authorities; and any regulations adopted by Regulatory Authorities thereunder (including, as applicable, those requirements relating to cGMP, GLP, GCP, investigational use, and pre-market approval).

4.6.3. The Company, and to the knowledge of the Company, each Institution, has generated, prepared, maintained and retained all material information, data and biological materials that are required to be generated, prepared, maintained or retained by the Company and each Institution, as applicable, with respect to Products pursuant to, and materially in accordance with, GCP, GLP, cGMP and other Applicable Laws in the U.S. and, with respect to any activities conducted outside the U.S., the Applicable Laws in such jurisdiction. As of the date hereof, the Company has not received written notice of and, to the knowledge of the Company, as of the date hereof the Company has not received any other notice of, any pending or threatened Action from the FDA or any other Regulatory Authority or Governmental Authority alleging that any operation or activity of the Company is in violation of the FD&C Act, the PHSA or any analogous Applicable Laws promulgated by applicable Governmental Authorities outside the U.S.

4.6.4. The Company has made available to Buyer a complete and correct copy of all Regulatory Filings submitted to any Regulatory Authority by the Company or in the Company's possession. All Regulatory Filings submitted to any Regulatory Authority by or on behalf of the Company, and to the knowledge of the Company, each Institution, were true and correct in all material respects.

4.6.5. All preclinical research, clinical studies, and other studies and tests conducted by or on behalf of the Company, and to the knowledge of the Company, by or on behalf of each Institution with respect to Products, have been conducted, as applicable, in material compliance with research protocols, GLP, GCP, and all Applicable Laws, including the FD&C Act (and any regulations adopted thereunder). No preclinical research, clinical study or other study or test conducted by or on behalf of the Company, and to the knowledge of the Company, by or on behalf of each Institution, with respect to the Products has been terminated or suspended prior to completion. The Company, and to the knowledge of the Company, each Institution, has not, as of the date hereof, received any notice that any Regulatory Authority, investigator, or any relevant institutional review board, independent ethics committee or any other similar body has (i) refused to approve any clinical study, or any substantial amendment to a protocol for any clinical study, conducted or proposed to be conducted by or on behalf of the Company or any Institution, or (ii) initiated, or threatened to initiate, any action to suspend any clinical study conducted by or on behalf of the Company or any Institution, as applicable, or suspend or terminate any IND sponsored by the Company or any Institution, as applicable, or otherwise restrict or delay the preclinical or nonclinical research on or clinical study of any Product.

4.6.6. As of the date hereof, neither the Company nor, to the knowledge of the Company, any Institution, has received notice of any pending or threatened investigation or Action from the FDA, the U.S. Department of Health and Human Services Office of Inspector General, the U.S. Department of Justice, or any other federal, state, local, or foreign Governmental Authority alleging that the Company, or any Institution as relates to the Products, is in violation in any material respect of any Applicable Law, including the FD&C Act, the PHSA or any similar state, local or foreign equivalents to any of the foregoing.

4.6.7. The Company, and to the knowledge of the Company, each Institution in relation to the Company and the Products, has complied in all material respects with all applicable security and privacy standards regarding protected health information and personal data under (i) the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, including the regulations promulgated thereunder, (ii) EU Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016

on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (the General Data Protection Regulation) and all national implementing legislation thereof, and (iii) any applicable national, state, provincial or local privacy laws.

4.6.8. Neither the Company nor, to the knowledge of the Company, any Company Personnel or Affiliate has (i) made any materially false statement on, or material omission from, any notifications, applications, approvals, reports and other submission to any Governmental Authority or in any material legal proceeding; or (ii) committed any act, made any statement or failed to make any statement that would reasonably be expected to provide a basis for the FDA to invoke its policy with respect to "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" or for the FDA or any other Governmental Authority to invoke any similar policy. Neither the Company nor any Company Personnel has been convicted of any crime or engaged in any conduct that has resulted, or would reasonably be expected to result, in debarment or exclusion under Applicable Laws, including 21 U.S.C. §335a and 42 U.S.C. §1320a-7. No Actions that would reasonably be expected to result in such a debarment or exclusion of the Company are pending or, to the knowledge of the Company, threatened, against the Company or, to the knowledge of the Company, any Company Personnel.

4.6.9. The Company, and, to the knowledge of the Company, each Institution as relates to the Products, has not received any warning letter or untitled letter, report of inspectional observations, including FDA Form 483s, establishment inspection reports, notices of violation, clinical holds, enforcement notices or other documents or notifications from any Regulatory Authority or other Governmental Authority, or any institutional review board, independent ethics committee or similar body, alleging a lack of compliance with any Applicable Laws. The Company has not been subject to a corporate integrity agreement, deferred prosecution agreement, consent decree, monitoring agreement, settlement agreement or other similar agreements or orders mandating or prohibiting future or past activities.

4.6.10. The Company, and to the knowledge of the Company, each Institution, has not marketed, advertised, distributed (for commercialization purposes), sold, or commercialized any Product.

4.6.11. The Company has provided or made available to Buyer true, complete and correct copies of all adverse information with respect to the safety and efficacy of Products relating to activities performed by or on behalf of the Company, and to the knowledge of the Company, by or on behalf of any Institution.

4.6.12. The Company has provided Buyer with the opportunity to review all written preclinical (including research), clinical and other material experimental data in the Company's possession relating to the Products or the exploitation thereof relating to activities performed by or on behalf of the Company, and to the knowledge of the Company, by or on behalf of any Institution, and has not intentionally concealed from Buyer any such data.

4.6.13. To the Company's knowledge, there are no safety, efficacy, or regulatory issues that would materially preclude Buyer or the Surviving Corporation from exploiting Products in compliance with Applicable Laws.

4.7. **Permits**. The Company validly holds and has in full force and effect all Permits necessary for it to own, lease or operate its assets and properties and to carry on its businesses as now conducted in all material respects, including, as applicable, the research, development and manufacturing of Products, and there has occurred no material violation of, or material default (with or without notice or lapse of time or both) under, or event giving to any Governmental Authority any right of termination, amendment or cancellation of, any such Permit. The Company has complied in all material respects with the terms and conditions of all Permits issued to or held by the Company, and such Permits will not be subject to suspension, modification, revocation or nonrenewal as a result of the execution and delivery of this Agreement or the consummation of the Merger or the other transactions contemplated hereunder. No Action is pending or, to the knowledge of the Company, threatened seeking the revocation or limitation of any Permit. Section 4.7 of the Disclosure Schedule lists each Permit issued or granted to or held by the Company, true and complete copies of which have been provided to Buyer. All of the Permits listed on Section 4.7 of the Disclosure Schedule are held in the name of the Company, and none are held in the name of any Company Personnel or agent or otherwise on behalf of the Company.

4.8. **Financial Statements**. Section 4.8 of the Disclosure Schedule sets forth (i) the unaudited consolidated balance sheets as of December 31, 2018 (the "**Most Recent Balance Sheet Date**"), and for the calendar years ended December 31, 2017 and December 31, 2016, respectively, together with the unaudited statements of income for each of such calendar years then ended, and (ii) the unaudited consolidated balance sheets as of March 31, 2019 and April 30, 2019 and statements of income of the Company as of March 31, 2019 (the statements referred to in clauses (i) and (ii) being referred to collectively as the "**Financial Statements**"). The Financial Statements have been prepared from the books and records of the Company and are consistent with the books and records of the Company and fairly present, in all material respects, the consolidated financial condition of the Company as of the dates indicated and have been prepared in accordance with GAAP, with the exception that the Company's Financial Statements remain subject to changes resulting from normal year-end audit adjustments and lack footnotes.

4.9. **Absence of Changes or Events**. Since the Most Recent Balance Sheet Date, (a) the Company has not conducted any business operations outside the Ordinary Course of Business, (b) there has occurred no Material Adverse Change, and (c) the Company has not taken any actions that, if taken after the date of this Agreement, would constitute a breach of any of the covenants set forth in Section 6.1.

4.10. **Undisclosed Liabilities**. The Company has no Liabilities, except for such Liabilities (a) set forth on Section 4.10 of the Disclosure Schedule, (b) set forth or adequately provided for in the Financial Statements, (c) that are immaterial and have been incurred in the Ordinary Course of Business since the Most Recent Balance Sheet Date, or (d) set forth in Contracts and are to be performed solely after the Closing, other than obligations due to any breaches or non-performance thereunder or for indemnification for pre-Closing acts or omissions.

4.11. **Assets; Personal Property**.

4.11.1. The Company is the true and lawful owner and has good and valid title to all material assets reflected on the Most Recent Balance Sheet or thereafter acquired except those sold or otherwise disposed of for fair value or consumed in the Ordinary Course of Business since the Most Recent Balance Sheet Date and not in violation of this Agreement, in each case, free and clear of all Liens, other than Permitted Liens. The Company's representations and warranties under this Section 4.11 are not made with respect to matters relating to Intellectual Property or any tangible embodiments thereof (such matters being the subject of Section 4.14).

4.11.2. Section 4.11.2 of the Disclosure Schedule sets forth any Contract pursuant to which the Company leases material personal property as lessee or lessor (the "**Personal Property Leases**"). The Company has (i) good, valid and marketable title to all of the personal property owned by the Company, and (ii) valid leasehold interests in all personal property leased by it, in each case of clauses (i) and (ii), free and clear of all Liens, other than Permitted Liens. The Company enjoys peaceful and undisturbed possession under all Personal Property Leases. The material personal property owned or leased by the Company constitutes, in all material respects, all personal property necessary for the operation of the Company's business as presently conducted. All material personal property owned or leased by the Company is maintained in good operating condition, reasonable wear and tear excepted, for the purposes for which it is currently being used and is located at the offices of the Company. The Company has provided to Buyer true and correct copies of all Personal Property Leases.

4.12. **Real Property**.

4.12.1. The Company owns no fee title to real property.

4.12.2. Section 4.12.2(i) of the Disclosure Schedule lists all real property leased by the Company (each, a "**Leased Property**"), including the name and address of the landlord. The Company has delivered to Buyer complete and accurate copies of all leases or other occupancy agreements pursuant to which the Company occupies such real property, including all amendments thereto, and any subleases, lease guarantees, and subordinations, non-disturbance and attornment agreements with respect thereto currently in effect. With respect to each Leased Property, except as set forth in Section 4.12.2(ii) of the Disclosure Schedule: (i) the Company has good and valid title to the leasehold estate relating thereto, free and clear of all Liens (other than Permitted Liens or Liens to which the underlying fee is subject), (ii) the lease relating to such Leased Property is in writing and is valid and binding, in full force and effect and enforceable against the Company and, to the knowledge of the Company, the other parties thereto, in accordance with its terms, applicable bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or similar Applicable Laws affecting creditors' rights generally and general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity), (iii) the lease relating to such Leased Property will, immediately following the Effective Time, continue to be legal, valid, binding, in full force and effect and enforceable against the Company and, to the knowledge of the Company, the other parties thereto, in accordance with but subject to its terms as in effect on the date hereof, (iv) the Company is not and, to the knowledge of the Company, no other party to the lease relating to such Leased Property is, in breach or violation of, or in default under, such lease in any material respect, (v) no event, occurrence, condition or act has occurred, is pending or, to the knowledge of the Company is threatened, which, with the giving of notice, lapse of time, would constitute a material breach or material default by the Company or, to the knowledge of the Company, any other party to such lease, under such lease, (vi) there are no disputes, oral agreements or forbearance programs in effect between the Company and the lessor as to the lease relating to such Leased Property, (vii) all rents and additional rents currently due and payable on the lease relating to such Leased Property have been paid (or will be paid prior to the last day payment is permitted); (viii) all facilities included in such Leased Property are supplied with utilities adequate for the current operation by the Company of such facilities, (ix) to the knowledge of the Company, there is no Lien (other than Permitted Liens) applicable to such Leased Property which currently materially impairs the current uses or occupancy by the Company of such Leased Property.

4.13. **Contracts**.

4.13.1. Section 4.13.1 of the Disclosure Schedule lists the following Contracts, as of the date hereof, that are in effect and to which the Company is a party (each such Contract, a "**Material Contract**"):

(a) employment or individual independent contractor Contracts, or any employee collective bargaining agreements or other Contracts, in each case, with any labor union or other employee representative body (a "**Union**");

(b) Contracts that limit the freedom of the Company to compete in any line of business or geographic or therapeutic area or otherwise restricting the research, development, manufacture, marketing, distribution, sale, supply, license or marketing of the products and services that the Company or any Affiliate currently plans to develop, or to make

use of any of their Intellectual Property rights or which would so limit the freedom of the Company after the Closing Date;

(c) Contracts containing any "non-solicitation" or "no-hire" provision that restricts the Company (other than nondisclosure agreements entered into in the Ordinary Course of Business);

(d) leases, subleases or similar Contracts that the Company is a party to that is related to (A) any Leased Property or (B) any portion of any premises otherwise occupied by the Company, in each case involving expenditures in excess of [*] per year;

(e) Personal Property Leases providing for lease payments in excess of [*] per year;

(f) Contracts for the purchase or sale of products or the furnishing or receipt of services (A) calling for performance over a period of more than one year, (B) requiring or otherwise involving payment by or to the Company of more than an aggregate of [*], (C) in which the Company has granted manufacturing rights, "most favored nation" pricing provisions or marketing or distribution rights relating to any products or territory or (D) in which the Company has agreed to purchase a minimum quantity of goods or services or has agreed to purchase goods or services exclusively from a certain party;

(g) Contracts (or letter of intent) involving the disposition or acquisition of any product line, business or significant portion of the assets, properties or business of the Company, or any merger, consolidation or similar business combination transaction, whether or not enforceable;

(h) Contracts relating to material capital expenditures or other purchases of material, supplies, equipment or other assets or properties (other than purchase orders for inventory or supplies in the Ordinary Course of Business);

(i) Contracts for any joint venture, partnership, joint product development, strategic alliance or co-marketing arrangement;

(j) Contracts granting a third party any license or sublicense to any Company Intellectual Property, or pursuant to which the Company has been granted by a third party any license or sublicense to any Intellectual Property, or any other license, sublicense, option or other Contract relating in whole or in part to the Company Intellectual Property or the Intellectual Property of any other Person, except, in each case, for standard end-user, internal use software licenses for the use of commercial "shrink-wrapped" software, whether actually "shrink-wrapped", downloaded or otherwise made available to the Company;

(k) any Contracts to which the Company is a party relating to research services or Clinical Trials in respect of products (including Products) of the Company;

(l) any right of first refusal, right of first negotiation or right of first offer in favor of a party other than the Company;

(m) any agency, dealer, sales representative, distribution, marketing or other similar agreements;

(n) Contracts (other than trade debt incurred in the Ordinary Course of Business) under which the Company has borrowed (or may borrow) any money from, or issued (or may issue) any note, bond, debenture or other evidence of Indebtedness to, any Person;

(o) Contracts (including so-called take-or-pay or keepwell agreements) under which (A) any Person (including the Company) has directly or indirectly guaranteed or assumed Indebtedness, Liabilities or obligations of the Company or (B) the Company has directly or indirectly guaranteed or assumed Indebtedness, Liabilities or obligations of any Person (in each case other than endorsements for the purpose of collection in the Ordinary Course of Business);

(p) Contracts under which the Company has made or is obligated make, directly or indirectly, any advance, loan, extension of credit or capital contribution to, or other investment in, any Person (other than the Company) or any Contracts relating to the making of any such advance, loan, extension of credit, capital contribution or other investment;

(q) Contracts providing for indemnification of any Person by the Company outside of the Ordinary Course of Business;

(r) any Contracts with any current or former holder of Company Capital Stock;

(s) Contracts involving any resolution or settlement of any Action or other dispute;

(t) any Contracts containing any covenant not to sue, concurrent use agreement, settlement agreement, pre-rights declarations, co-existence agreement or other consent with respect to the Company Intellectual Property;

(u) Contracts providing that the Company or any Company Personnel maintain the confidentiality of any information, or providing for any Person to maintain the confidentiality of any information material to the Company, in each

case outside of the Ordinary Course of Business;

(v) Contracts under which the consequences of a default or termination could reasonably be expected to result in a Material Adverse Change; and

(w) any other Contracts involving future payments in excess of [*] in a [*] period.

4.13.2. Each Material Contract is in full force and effect, and is valid and binding and enforceable in accordance with its terms against the Company and, to the knowledge of the Company, the other parties thereto, subject to applicable bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or similar Applicable Laws affecting creditors' rights generally and general principles of equity. A true, correct and complete copy of each written Material Contract and a true, correct and substantially complete summary of each oral Material Contract have been provided to Buyer. There is no violation, breach (including anticipatory breach) or default under any Material Contract by the Company or, to the knowledge of the Company, by any other party thereto, and no event has occurred or condition exists that with the lapse of time or the giving of notice or both would constitute a default thereunder by the Company or, to the knowledge of the Company, any other party thereto, and the Company has not received or given notice of any default or claimed or purported or alleged default or state of facts which, with notice or lapse of time or both, would constitute a default on the part of any party in the performance or payment of any Material Contract. Except as set forth in Section 4.13.2 of the Disclosure Schedule, no notice, waiver, consent or approval is required (or the lack of which would give rise to a right of termination, cancellation or acceleration of, or entitle any party to accelerate, whether after the giving of notice or lapse of time or both, any obligation under the Material Contracts) under or relating to any Material Contract in connection with the execution, delivery and performance of this Agreement or the consummation of the Merger or any of the other transactions contemplated hereby and thereby. Immediately following the Effective Time, each Material Contract will continue to be in full force and effect, and valid, binding and enforceable in accordance with but subject to its terms, subject to applicable bankruptcy, insolvency, reorganization, fraudulent transfer, moratorium or similar Applicable Laws affecting creditors' rights generally and general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity).

4.14. **Intellectual Property**.

4.14.1. The Patents set forth in Section 4.14.1 of the Disclosure Schedule represent all of the Patents within the Company Intellectual Property that are (a) owned or purported to be owned by the Company or (b) licensed to the Company ("**Company Patent Rights**"). For each Patent listed therein, Section 4.14.1 of the Disclosure Schedule indicates the title, country, inventors, application number, patent number, filing date, issue date (if issued), any continuity relationship (such as continuation, continuation-in-part or divisional) with respect to any other Patent and whether such Patent is in effect, expired or abandoned. The Company solely owns, free and clear of any liens or any other claims (including any claim of ownership or other right by any inventor of any Patent or any other third party), all of the Company Patent Rights other than those that are licensed to the Company and which are identified as being licensed to the Company in Section 4.14.1 of the Disclosure Schedule. Each of the Patents listed in Section 4.14.1 of the Disclosure Schedule that is owned or purported to be owned by the Company, and, to the Company's knowledge, each of the Patents listed in Section 4.14.1 of the Disclosure Schedule that is licensed to the Company, properly identifies each and every inventor of the claims thereof as determined in accordance with Applicable Laws of the jurisdiction in which such Patent is issued or pending.

4.14.2. All of the Company Patent Rights owned or purported to be owned by the Company have been properly assigned to the Company, and all such assignments have been properly recorded in the U.S. Patent and Trademark Office ("**PTO**") or any appropriate foreign patent office, to the extent the PTO and/or the foreign patent office permits such recording.

4.14.3. To the knowledge of the Company, the Company has no registered copyrights.

4.14.4. The Company does not, and has no contingent obligation or right to, pay or receive any milestone payment or royalty to or from anyone with respect to any Company Intellectual Property.

4.14.5. There are no pending or, to the knowledge of the Company, contemplated Actions relating to any Company Intellectual Property to which the Company is a party, nor has the Company received written communication from any Person threatening the institution of any Action relating to any Company Intellectual Property. The Company has not received written notice of, and there are no, ongoing interferences, oppositions, reissues, reexaminations or other proceedings (including ex parte and post-grant proceedings) involving any of the Company Patent Rights with the PTO or in any foreign patent office or similar Governmental Authority.

4.14.6. The Surviving Corporation's rights with respect to the Company Intellectual Property immediately after the Closing will not be diminished relative to the Company's rights with respect to the Company Intellectual Property immediately prior to the Closing solely as a result of the consummation of the Merger.

4.14.7. The Company is not subject to any Judgment with respect to the Company's practice of any of the Company Intellectual Property. To the knowledge of the Company, (i) the use of the Company Intellectual Property in the development of Products prior to the date hereof has not infringed upon any Intellectual Property rights of any third party, (ii) the manufacture, use, sale, offer to sell or import of the Products does not and will not have interfered with, infringed, or constituted a misappropriation of any Intellectual Property rights of any third party solely as a result of the use of the

Company Intellectual Property in conducting such activities, and (iii) the commercialization of the Products has not, and will not have (after successful commercialization of such Products), interfered with, infringed, violated or constituted a misappropriation of any Intellectual Property rights of any third party solely as a result of the use of the Company Intellectual Property in conducting such activities. The Company has not received any written or oral charge, complaint, claim, demand or notice alleging any such interference, infringement, violation or misappropriation (including any written or oral claim that the Company must license or refrain from using any Intellectual Property rights).

4.14.8. The Company has not entered into any forbearance to sue or settlement agreement with respect to any Company Intellectual Property and no Actions have been asserted against the Company in writing or been otherwise threatened by any Person with respect to the validity or enforceability of, or the Company's ownership of or right to use, the Company Intellectual Property and, to the knowledge of the Company, there is no reasonable basis for any such Action.

4.14.9. The Company Patent Rights do not, as of the date hereof, include any issued Patents. The Company has provided or made available to Buyer, true, complete and correct copies of the file wrapper and other documents and materials relating to the prosecution, maintenance, validity and enforceability of the Company Patent Rights.

4.14.10. To the knowledge of the Company, no third party has interfered with, infringed violated or misappropriated, or is currently interfering with, infringing, violating or misappropriating any rights under the Company Intellectual Property.

4.14.11. As of the date hereof and the Closing Date, no item of Company Intellectual Property has been finally judged or finally determined to be invalid or unenforceable, or has lapsed, expired or been abandoned or canceled or, to the knowledge of the Company, is the subject of cancellation or any other adversarial proceeding. As of the date hereof and the Closing Date, the Company has prosecuted in accordance with Applicable Laws, and has timely made all filings and paid all fees required to be paid or filed in connection with the continued prosecution of, the patent applications listed on Section 4.14.1 of the Disclosure Schedule. As of the date hereof and the Closing Date, in respect of the patent applications listed on Section 4.14.1 of the Disclosure Schedule, to the knowledge of the Company, the Company has presented all references, documents or information for which it and the inventors had a duty to disclose under Applicable Laws, including 37 C.F.R. 1.56 or its foreign equivalent, to the relevant patent examiner at the relevant patent office.

4.14.12. The Company has taken reasonable precautions to maintain the confidentiality of the material Know-How within the Company Intellectual Property ("**Company Know-How**"), the Parties agreeing that the disclosure of any Company Know-How in any Patent application owned by the Company shall not be deemed a failure to take reasonable precautions to maintain the confidentiality of that Company Know-How for purposes of this section. To the knowledge of the Company, (a) all disclosure of such Company Know-How to, and use by, any third party (other than (i) Governmental Authorities, accountants and counsel, in each instance acting in their professional capacities, or (ii) pursuant to an applicable Judgment) has been pursuant to the terms of a written confidentiality and limited use agreement between such third party and the Company and (b) no third party has breached any such agreement. To the knowledge of the Company, the Company has not materially breached any agreements of non-disclosure or confidentiality relating to the Company Know-How to which it is a party. The Company has not received notice of any claim or allegation of any such breach. All Company Personnel who have contributed to or participated in the conception or development of any material Company Intellectual Property (the "**Contributing Personnel**") have executed and delivered to the Company a confidentiality agreement restricting such Person's right to disclose and use proprietary information and materials of the Company, and true, correct and complete copies of all such agreements have been made available to Buyer. All Contributing Personnel either (A) have been party to a "hired to invent" agreement with the Company, in accordance with Applicable Law, that has accorded the Company the sole and exclusive ownership of all tangible and intangible property arising in the course of such Contributing Personnel's services on behalf of the Company or (B) have executed appropriate instruments assigning, or agreements to assign, to the Company the sole and exclusive ownership of all Intellectual Property conceived during the course of their services on behalf of the Company. To the knowledge of the Company, no Contributing Personnel is in violation of any term of any assignment or other agreement with the Company relating to the Company Intellectual Property. To the knowledge of the Company, no Contributing Personnel has any claim against the Company in connection with such Person's involvement in the conception and development of any Company Intellectual Property. No such claim has been asserted and, to the knowledge of the Company, no such claim has been threatened. The Contributing Personnel have each assigned to the Company all of their interests in the material Company Intellectual Property owned or purported to be owned by the Company. To the knowledge of the Company, the inventors of material Company Intellectual Property licensed by the Company have each assigned to the respective licensor. With respect to assignments of Company Intellectual Property owned or purported to be owned by the Company and, to the knowledge of the Company, with respect to assignments of Company Intellectual Property licensed by the Company, such assignments have been duly recorded with the PTO or in any foreign patent office or similar Governmental Authority, to the extent the PTO, the foreign patent office, and/or similar Governmental Authority permit such recording, except with respect to Patents that are licensed to the Company.

4.14.13. To the knowledge of the Company, any Institution or other licensor that owns any Company Intellectual Property that is subject to the requirements of the Bayh-Dole Act or any similar provision of any Applicable Law, has, to the extent applicable, (i) disclosed all relevant inventions to the applicable government funding authority and (ii) elected to retain title to such Company Intellectual Property, in each case in accordance with the Bayh-Dole Act and such similar provision.

4.14.14. The Company has no obligations to remunerate any Person in respect of any Company Know-How and Intellectual

Property rights therein that has been assigned to the Company or its Affiliate(s).

4.15. **Litigation**. There is no Action that is pending or, to the knowledge of the Company, threatened against the Company (or any holders of Company Capital Stock or directors, officers, agents or employees of the Company, to the extent such Actions relate to the Company) or any assets or properties of the Company. There are no Judgments outstanding against the Company (or any holders of Company Capital Stock or directors, officers, agents or employees of the Company, to the extent such Judgments relate to the Company) or any assets or properties of the Company. Since the Company's formation, there has not been any Action in respect of the Company that (a) resulted in a Judgment against or settlement by the Company (whether or not such Judgment or settlement was paid, in whole or in part, by an insurer of the Company or other third party), (b) resulted in any equitable relief or (c) relates to the Merger and the other transactions contemplated by this Agreement. There is no Action pending by the Company, or which the Company intends to initiate, against any other Person. To the knowledge of the Company, there is no fact or circumstance that could reasonably be expected to serve as a valid basis for an Action against the Company.

4.16. **Taxes**.

4.16.1. All income and other material Tax Returns with respect to the Company that are required to have been filed have been duly and timely filed with the appropriate Taxing Authority and all such Tax Returns have been prepared in material compliance with all Tax Laws and were true, correct and complete in all material respects. All Taxes owed by the Company (whether or not shown as due and payable on any Tax Returns) have been timely paid.

4.16.2. All Taxes that the Company has been required to deduct, collect or withhold in connection with amounts paid or owing to any employee, independent contractor, creditor, shareholder or other third party, have been duly and timely deducted, collected or withheld and have been duly and timely paid to the appropriate Taxing Authority, and the Company has complied in all material respects with all associated or related reporting and record keeping requirements.

4.16.3. No dispute, audit, investigation, proceeding or claim concerning any Liability for Taxes of the Company, or any Tax Returns of the Company, has been raised in writing by a Taxing Authority and, to the knowledge of the Company, no such dispute, audit, investigation, proceeding or claim is threatened, pending, being conducted or claimed. The Company has provided or made available to Buyer true, correct and complete copies of all Tax Returns, examination reports, and statements of deficiencies filed, assessed against, or agreed to by the Company since inception.

4.16.4. The Company has not received any written notice of deficiency, assessment or underpayment of Taxes or of adjustment of any Tax items and, to the knowledge of the Company, there is no proposed deficiency, assessment or adjustment from any federal, state, local or other Taxing Authority which could affect the Company or which relates to the Company's business, income, gain or assets.

4.16.5. There are no Liens for Taxes (other than statutory liens for current Taxes not yet due and payable) on the assets and properties of the Company.

4.16.6. No written claim has ever been made by a Taxing Authority, in a jurisdiction where the Company does not file Tax Returns or does not pay Taxes, that the Company is (or may be) required to file Tax Returns in or be subject to Tax by that jurisdiction.

4.16.7. No agreement or arrangement extending, or having the effect of extending, the period of assessment or collection of any Taxes payable by the Company is in effect and the Company is not the beneficiary of any extension of time within which to file any Tax Return. There is no power of attorney given by or binding upon the Company with respect to Taxes. No closing agreements, private letter rulings, technical advice memorandum or similar agreements or rulings relating to Taxes have been entered into or issued by any Taxing Authority with or in respect of the Company.

4.16.8. The unpaid Taxes of the Company for all Pre-Closing Tax Periods as of the end of the day on the Closing Date shall not exceed the amount of Taxes included as a current liability in the calculation of Working Capital, as finally determined.

4.16.9. The unpaid Taxes of the Company did not (i) as of the Most Recent Balance Sheet Date exceed the reserve for Taxes (excluding any reserve for Taxes established to reflect timing differences between book and Tax income) set forth on the face of the Most Recent Balance Sheet (rather than in any notes thereto), and (ii) will not, as of the Closing Date, exceed such reserve for Taxes as adjusted for ordinary course operations consistent with past practice through the Closing Date. Since the Most Recent Balance Sheet Date, the Company has not incurred any material liability for Taxes outside the ordinary course of business consistent with past practice (other than in connection with the transactions contemplated by this Agreement).

4.16.10. The Company will not be required to include any item of income in, or exclude any item of deduction from, Taxable income for any Post-Closing Tax Period as a result of any (i) change in method of accounting for a Pre-Closing Tax Period, (ii) "closing agreement" as described in Section 7121 of the Code (or any corresponding or similar provision of state, local or foreign law) executed on or prior to the Closing Date, (iii) installment sale or open transaction disposition made in a Pre-Closing Tax Period, (iv) prepaid amount received or paid or deferred revenue in existence in a Pre-Closing Tax Period or (v) election pursuant to Section 108(i) of the Code made on or prior to the Closing Date.

4.16.11. The Company is not, and has never been, a "United States real property holding corporation" within the meaning of

Code Section 897.

4.16.12. The Company is not, and has never been, a member of an affiliated group of corporations filing a consolidated federal income Tax Return. The Company has no Liability for the Taxes of any Person under Treasury Regulations Section 1.1502-6 (or comparable provision of domestic or foreign Tax Law), as a transferee or successor or by Contract (other than with respect to Contracts that are not primarily related to Taxes entered into in the ordinary course of business).

4.16.13. The Company has not constituted a "distributing corporation" or a "controlled corporation" in a distribution qualifying or purported to qualify for Tax-free treatment (in whole or in part) under Code Section 355(a) or under analogous provisions of domestic or foreign Tax Law.

4.16.14. The Company is not a party to, or otherwise bound by or subject to, any Tax sharing, allocation or indemnification or similar agreement, provision or arrangement (other than Contracts that are not primarily related to Taxes entered into in the ordinary course of business).

4.16.15. The Company is not a party to any joint venture, partnership or other arrangement or Contract which could be treated as a partnership for Tax purposes.

4.16.16. The Company has not been a party to a transaction that is or is substantially similar to a "reportable transaction" as such term is defined in Treasury Regulations Section 1.6011-4(b) or any "tax shelter" within the meaning of Code Section 6662, or any other transaction requiring disclosure under analogous provisions of domestic or foreign Tax Law.

4.16.17. Neither the execution and delivery of the Agreement nor the consummation of the transactions contemplated hereby (either alone or upon the occurrence of any additional or subsequent event) will constitute a triggering event under any Plan, policy, Contract, arrangement or commitment, whether or not legally enforceable, which (either alone or upon the occurrence of any additional or subsequent event) will or could reasonably be expected to result in any "excess parachute payment" (as defined in Section 280G of the Code and the regulations thereunder (collectively, "**Section 280G**")).

4.16.18. Each holder of Company Restricted Stock has made a valid election under Section 83(b) of the Code with respect to such Company Restricted Stock.

4.16.19. Since the Most Recent Balance Sheet Date, the Company has not: changed or revoked any Tax election, changed any method of accounting for Tax purposes, changed any Tax accounting period, amended any Tax Return, surrendered any right to claim a refund of Taxes, settled or compromised any Action in respect of Taxes, voluntarily approached any Taxing Authority in respect of prior year Taxes (including through any voluntary disclosure process), consented to any extension or waiver of the statutory period of limitations applicable to any Action in respect of Taxes, entered into any contractual obligation in respect of Taxes with any Governmental Authority or other party, or taken any action outside of the ordinary course of business that could increase the Taxes of the Company for any period ending after the Closing Date or decrease any Tax attribute of the Company existing on the Closing Date.

4.16.20. Notwithstanding anything to the contrary in this Agreement, it is agreed and understood that (i) other than the second two sentences of Section 4.16.7 and Sections 4.16.10, 4.16.12, 4.16.14, 4.16.18, 4.16.19, the representations and warranties of the Company in this Section 4.16 refer only to activities prior to the Closing and shall not serve as representations and warranties regarding, or a guarantee of, nor can they be relied upon with respect to, Taxes attributable to any Tax period (or portion thereof) beginning, or Tax positions taken, after the Closing Date, and (ii) no representations or guarantees are made with respect to the amount or availability of Tax attributes of the Company for any taxable period (or portion thereof) beginning after the Closing Date.

4.17. **Insurance**. Section 4.17 of the Disclosure Schedule contains a complete and accurate list of all policies of fire, liability, workers' compensation, title and other forms of insurance owned, held by or otherwise applicable to the assets, properties or operations of the Company, and the Company has heretofore delivered to Buyer a complete and accurate copy of all such policies, including all occurrence based policies applicable to the assets, properties or operations of the Company for all periods prior to the Closing Date. All such policies (or substitute policies with substantially similar terms and underwritten by insurance carriers with substantially similar or higher ratings) are valid and subsisting and in full force and effect in accordance with their terms, all premiums with respect thereto covering all periods up to and including the Closing Date have been paid, and no notice of cancellation or termination (or any other threatened termination) has been received with respect to any such policy. The Company is not in default under any of such insurance policies, and there exists no event, occurrence, condition or act which, with the giving of notice, the lapse of time or the happening of any other event or condition, would become a default thereunder. There are no pending or, to the knowledge of the Company, threatened claims under any insurance policy.

4.18. **Benefit Plans**.

4.18.1. Section 4.18.1 of the Disclosure Schedule contains a complete and correct list of all: (i) "employee benefit plans," within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended, ("**ERISA**"), whether or not subject to ERISA; (ii) bonus, stock option, stock purchase, restricted stock, equity or equity-based compensation, stock appreciation rights, phantom stock, incentive, fringe benefit, voluntary employees' beneficiary associations under Section 501(c)(9) of the Code, profit-sharing, commission, pension, retirement, deferred

compensation, day or dependent care, legal services, cafeteria, medical, life insurance, dental, vision, disability, accident, salary continuation, severance, accrued leave, vacation, sick pay, sick leave, supplemental retirement, unemployment and welfare benefit Contracts, plans, programs, arrangements, commitments or practices (whether or not insured); and (iii) employment, consulting, individual independent contractor, services agreement, termination, change in control, retention, and severance Contracts, plans, programs, arrangements, commitments or practices, in each case, that the Company has established, maintained or contributed to (or with respect to which an obligation to contribute has been undertaken) or that the Company is a party to, in each case, with or for the benefit of, as applicable, any Company Personnel, or with respect to which the Company has any Liability (collectively, the "**Plans**").

4.18.2. No Plan is, and neither the Company nor any ERISA Affiliate has ever at any time sponsored, contributed to, been required to contribute to, maintained or had any Liability in respect of, (A) a Plan that is or was subject to Title IV of ERISA or Section 412 of the Code or Section 302 of ERISA or (B) a "multiemployer plan" (as defined in Section 4001(a)(3) of ERISA). For this purpose, "**ERISA Affiliate**" shall mean any person that for purposes of Title I and Title IV of ERISA and Section 412 of the Code would be deemed at any relevant time to be a single employer with the Company under Section 414(b), (c), (m) or (o) of the Code or Section 4001 of ERISA.

4.18.3. All Plans have been administered and operated in all material respects in compliance with their terms and with all requirements of Applicable Law, including ERISA and the Code. No event or omission has occurred which would reasonably be expected to cause any Plan to fail to satisfy the relevant requirements to provide tax-favored benefits under the applicable Code Section (including Code Sections 105 and 125). Each Plan intended to be qualified under Section 401(a) of the Code (including each related trust intended to be exempt from taxation under Section 501(a) of the Code) has received a favorable IRS determination letter or is comprised of a master or prototype plan that has received a favorable opinion letter from the IRS upon which it can rely. Since the date of each such determination letter or opinion letter, no event has occurred and no condition exists that would reasonably be expected to result in the revocation of any such determination letter or opinion letter or that would reasonably be expected to adversely affect the qualified status of any such Plan (or the tax-exempt status of any such trust) or that would reasonably be expected to result in material Liability to the Company. None of the Plans provide for post-employment or retiree health, life insurance and/or other welfare benefits (except as required by Section 4980B of the Code or any similar state law), and the Company has no obligation to provide any such benefits to any Company Personnel following such person's retirement or termination of service. Each Plan that is a "nonqualified deferred compensation plan" subject to Section 409A of the Code has been maintained and operated in both operational and documentary compliance with Section 409A of the Code in all material respects.

4.18.4. Each Plan may be amended, terminated or otherwise modified by the Company to the greatest extent permitted by Applicable Law. The Company does not have any commitment to create, modify or terminate any Plan. No event has occurred, and no condition or circumstance exists, that could reasonably be expected to result in a material increase in the benefits under or the expense of maintaining any Plan as compared to the level of benefits or expense incurred for the most recently ended fiscal year of the Company.

4.18.5. Neither the Company nor any of its directors, officers, employees nor, to the knowledge of the Company, other Persons who participate in the operation of any Plan or related trust or funding vehicle, has engaged in any transaction with respect to any Plan or breached any applicable fiduciary responsibilities or obligations under ERISA or the Code that could reasonably be expected to result in any claim being made under, by or on behalf of any such Plan by any Person with standing to make such claim for which the Company could have material Liability.

4.18.6. Other than routine claims for benefits made in the Ordinary Course of Business, there are no pending Actions or other claims, actions or investigations, and to the knowledge of the Company no Actions or other claims, actions or investigations are threatened, against any Plan or fiduciary of any such Plan by any participant, beneficiary or Governmental Authority for which the Company could have material Liability, and to the knowledge of the Company there is no basis to anticipate that any such Actions will be made or asserted. To the knowledge of the Company, there are no inspections or audits pending to be resolved or implemented by any Governmental Authority to verify compliance relating to any Plan or term and condition of employment. To the knowledge of the Company, no Plan or any fiduciary thereof with respect to any Plan has been the direct or indirect subject of an audit, investigation or examination by any Governmental Authority.

4.18.7. The Company has properly classified all individuals who have performed services for them in accordance with the applicable requirements of ERISA, the Code and other Applicable Law as common law employees, independent contractors or leased employees, as applicable, other than for such failures to classify correctly as are not likely to result in any material Liability for the Company.

4.18.8. The Company does not maintain or have any obligation to contribute to any "voluntary employees' beneficiary association" within the meaning of Section 501(c)(9) of the Code or other funding arrangement for the provision of welfare benefits. No Plan which is a group health plan is a "multiple employer welfare arrangement," within the meaning of Section 3(40) of ERISA.

4.18.9. Full payment has been timely made of all amounts which the Company is required, under Applicable Law or under any Plan, applicable collective bargaining agreement or any Contract relating to any Plan to which the Company is a party, to

have paid as contributions or premiums thereto as of the last day of the most recent fiscal year of such Plan ended prior to the date hereof and such contributions or premiums have been timely deposited into the appropriate trusts or accounts.

4.18.10. Neither the execution and delivery of this Agreement, the consummation of the transactions contemplated hereby, nor the conduct of the business of the Company by the Company Personnel (either alone or upon the occurrence of any additional or subsequent event) will (i) terminate or modify, or give any Person a right to terminate or modify, the provisions or terms of any Plan, policy, Contract, arrangement or commitment (including employment agreements), whether or not legally enforceable or (ii) result in any payment or benefits (whether of severance pay or otherwise) or any acceleration of, vesting of or increase in or funding of payments or benefits to any employee or director or former employee or director of, or other present or former provider of services to, the Company. Except as set forth on Section 4.18.10 of the Disclosure Schedule, no Plan provides for the payment of severance, termination, change-in-control or any similar type of payments or benefits.

4.18.11. No Company Personnel is entitled to any gross-up, reimbursement or other payment in respect of Taxes imposed under Section 409A or 4999 of the Code.

4.18.12. The Company has provided to Buyer true and complete copies of all material documents in connection with each Plan, including (where applicable): (i) all documents embodying or governing such Plans, together with all amendments thereto, including, in the case of any Plan not set forth in writing, a written description thereof; (ii) all current summary Plan descriptions, summaries of material modifications and material communications; (iii) all current trust agreements, declarations of trust and other documents establishing other funding arrangements (and all amendments thereto and the latest financial statements thereof); (iv) the most recent IRS determination letter, if any, obtained with respect to each Plan intended to be qualified under Section 401(a) of the Code or exempt under Section 501(a) or 501(c)(9) of the Code; (v) the annual report on IRS Form 5500 for each Plan required to file such form, with all applicable schedules and accountants' opinions attached thereto, since inception of the Company; (vi) all Contracts relating to each Plan, including service provider agreements, insurance contracts (including any fiduciary liability insurance policy or fidelity bond), annuity contracts, investment management agreements, subscription agreements, participation agreements, and recordkeeping agreements and collective bargaining agreements; (vii) the three most recent annual ADP/ACP nondiscrimination tests for any Plan intended to be qualified under Section 401(k) of the Code; (viii) any registration statement or other filing made pursuant to federal or state securities Applicable Law; (ix) all material correspondence to and from any Governmental Authority with respect to the Plans; and (x) all minutes with respect to the meetings of each Plans' administrative committee or plan administrator.

4.19. **Employee and Labor Matters**.

4.19.1. There is no (i) strike, work slowdown, lockout, work stoppage or picketing with respect to employees of the Company pending or, to the knowledge of the Company, threatened against or affecting the Company, and there have been no such troubles, (ii) grievance or arbitration proceeding arising out of collective bargaining agreements to which the Company is a party, including any claim for the management and administration of a collective bargaining agreement, (iii) collective labor dispute, notice of infraction, assessment, administrative labor proceeding, individual labor claim or any other labor dispute pending, or to the knowledge of the Company, threatened against or affecting the Company, (iv) unfair labor practice complaint pending or, to the knowledge of the Company, threatened against the Company, (v) collective bargaining agreement, collective bargaining convention, or other Union Contract to which the Company is a party, or otherwise subject, (vi) employee of the Company who is represented by a Union, (vii) activity or proceeding of any Union to organize any employees of the Company, and no demand for recognition of employees of the Company has been made by, or on behalf of, any Union, or (viii) petition that has been filed or proceedings instituted by an employee or group of employees of the Company with any labor relations board seeking representation of a bargaining representative.

4.19.2. The Company is and has been in compliance in all material respects with all Applicable Laws regarding employment and employment practices, terms and conditions of employment, including wages and hours, the classification and compensation of employees and independent contractors, and payment of mandatory benefits, and is not engaged in any unfair labor practice.

4.19.3. There are no Actions pending nor, to the knowledge of the Company, threatened against the Company with respect to any employee of the Company requesting severance, reinstatement, back salaries or pay or any other additional compensation as a direct or indirect result of a wrongful termination or termination with cause or alleged wrongful termination or termination with cause.

4.19.4. The Company has not, during the three-year period prior to the date hereof, taken any action that would constitute a "mass layoff" or "plant closing" within the meaning of the Worker Adjustment and Retraining Notification ("**WARN**") Act or would otherwise trigger notice requirements or liability under any state, local or foreign plant closing notice Applicable Law. No arbitration order, court decision, Judgment or Material Contract to which the Company is a party or is subject in any way limits or restricts the Company from relocating or closing any of the operations of the Company.

4.19.5. Section 4.19.5 of the Disclosure Schedule contains a complete and correct list, as of the date hereof, of each employee of the Company, his or her current rate of annual base salary or current wages, bonus target for the current fiscal year of the Company, job title, employment status, work location, credited service date and date of hire. To the knowledge of the

Company, as of the date hereof, no current employee has given notice of termination of employment or otherwise disclosed plans to terminate employment with the Company.

4.19.6. To the knowledge of the Company, no officer, director or employee of the Company is a party to or bound by any Contract, license or covenant of any nature, or subject to any Judgment of any Governmental Authority, that (i) may interfere with the use of such Person's efforts to promote the interests of the Company, (ii) may conflict with the business of the Company or the Merger and the other transactions contemplated by this Agreement or (iii) would reasonably be expected to result in a Material Adverse Change. To the knowledge of the Company, no activity of any employee of the Company as or while an employee of the Company has caused a violation of any confidentiality agreement, Patents disclosure agreement or other Contract.

4.20. **Environmental Matters**. The Company has complied in all material respects at all times with all, and is not in violation of any, applicable Environmental Laws. The Company is in compliance with all material Permits required for its operations pursuant to applicable Environmental Laws. To the knowledge of the Company, the Company is not subject to any liability for Hazardous Material contamination on any property (including soils, groundwater, surface water, buildings or other structures) currently or formerly owned or operated by the Company, or any third-party property. The Company is not subject to any Judgment of any Governmental Authority, or, to the knowledge of the Company, any indemnity or other Contract with any third party, relating to liability under any Environmental Law. To the knowledge of the Company, no underground storage tanks, friable asbestos-containing material, or polychlorinated biphenyls are present at the real property owned by the Company. Copies of all environmental reports, studies, assessments, and sampling data in the possession of the Company that relates to the Company or any real property currently or formerly owned or operated by the Company have been made available to Buyer. The Company has not received any written notice, demand, letter, claim or request for information from any Governmental Authority or other Person indicating that it may be in violation of, or subject to liability under, any Environmental Law or regarding any actual, alleged, possible or potential liability arising from or relating to the presence, generation, manufacture, production, transportation, importation, use, treatment, refinement, processing, handling, storage, discharge, release, emission or disposal of any Hazardous Material used by the Company. No Lien or "superlien" has been placed on any site owned or operated by the Company pursuant to CERCLA or any similar state, local or federal Applicable Law.

4.21. **State Takeover Statutes**. The Board of Directors has unanimously approved the terms of this Agreement and the consummation of the Merger and the other transactions contemplated by this Agreement, and such approval represents all the actions necessary to render inapplicable to this Agreement and to the Merger and the other transactions contemplated by this Agreement, the restrictions on "business combinations" set forth in Section 203 of the DGCL, to the extent such restrictions would otherwise be applicable to this Agreement, the Merger and the other transactions contemplated by this Agreement. No other state takeover statute or similar statute or regulation applies to this Agreement, the Merger or the other transactions contemplated by this Agreement.

4.22. **Books and Records**. The minute books of the Company made available to Buyer prior to the date hereof accurately and adequately reflect in all material respects all action previously taken by the shareholders, the Board of Directors and committees of the Board of Directors. The copies of the stock book records of the Company made available to Buyer in the Data Room prior to the date hereof are true, correct and complete in all material respects, and accurately reflect in all material respects all transactions effected in Company Capital Stock through and including the date hereof.

4.23. **Bank Accounts**. Section 4.23 of the Disclosure Schedule contains a true, correct and complete list of all bank accounts maintained by the Company including each account number and the name and address of each bank and the name of each Person who has signature power with respect to each such account.

4.24. **Transactions with Affiliates**.

4.24.1. Section 4.24 of the Disclosure Schedule describes any transaction, since inception of the Company, between the Company, on the one hand, and any Company Holder or Affiliate of the Company, on the other hand, other than any employment Contract, Contract not to compete with the Company, Contract to maintain the confidential information of the Company, Contract assigning Intellectual Property rights to the Company, or Contract entered into in the Ordinary Course of Business, in each case listed in Section 4.13.1 of the Disclosure Schedule. For purposes of avoiding confusion, the word "transaction" in the preceding sentence shall mean any "transaction" of the type described in Item 404 of Regulation S-K promulgated under the Securities Exchange Act of 1934 (without regard to the amount involved in such transaction and without regard to the Company's not being subject to such regulation).

4.24.2. No Affiliate of the Company or Company Holder (a) owns or has any interest in any (i) Company Intellectual Property, (ii) other material property (real or personal, tangible or intangible) or (iii) Material Contract used in or pertaining to the business of, the Company, (b) to the knowledge of the Company, has any claim or cause of action against the Company or (c) owes any money to, or is owed any money by (other than, with respect to any Affiliate who is an employee of the Company, wages or benefits payable in the Ordinary Course of Business), the Company. Neither the Company nor any Affiliate of the Company, nor any officer, director or, to the knowledge of the Company, employee of the Company, possesses, directly or indirectly, any financial interest in, or is a director, officer or employee of, any Person that is a client, supplier, customer, lessor, lessee, competitor or potential competitor of the Company. Ownership of securities of a Person whose securities are registered under the Securities Exchange Act of 1934, as amended, of 5% or less of any class of such securities shall not be deemed to be a financial interest for purposes of this Section 4.24.

4.25. **Brokers**. The Company has no Liability to any investment banker, broker, finder, consultant or intermediary in connection with the Merger or the other transactions contemplated hereunder.

4.26. **Anticorruption Matters**.

4.26.1. Neither the Company, nor, to the knowledge of the Company, any of the Representatives of the Company acting on its behalf has, directly or indirectly, (i) taken any action in violation of any applicable anticorruption Applicable Law, including the U.S. Foreign Corrupt Practices Act ("**FCPA**") (15 U.S.C. § 78 dd-1 et seq.), or (ii) offered, paid, given, promised to pay or give, or authorized the payment or gift of anything of value, directly or indirectly, to any Public Official, for purposes of (A) influencing any act or decision of any Public Official in his or her official capacity, (B) inducing such Public Official to do or omit to do any act in violation of his lawful duty, (C) securing any improper advantage or (D) inducing such Public Official to use his or her influence with a Governmental Authority, or commercial enterprise owned or controlled by any Governmental Authority (including state-owned or controlled veterinary or medical facilities), in order to assist the Company or any Person related to the Company, in obtaining or retaining business.

4.26.2. None of the Representatives of the Company is a Public Official.

4.26.3. There have been no false or fictitious entries made in the books or records of the Company relating to any payment that the FCPA prohibits, and the Company has not established or maintained a secret or unrecorded fund for use in making any such payments.

4.26.4. The Company does not have knowledge of any pending investigation by a Governmental Authority with respect to violation of any applicable anticorruption Applicable Law, including the FCPA, relating to the Company.

4.26.5. The Company has policies that address and prescribe practices appropriate to facilitate compliance with applicable anticorruption Applicable Laws, including the FCPA.

4.27. **Export Controls and Sanctions Matters**.

4.27.1. Neither the Company nor, to the knowledge of the Company, any of the Representatives of the Company acting on its behalf has, in the three year preceding the Effective Time, directly or indirectly, taken any action in violation in any material respect of any applicable export control-related Applicable Law, trade- or economic sanctions-related Applicable Law, or antiboycott-related Applicable Law, in the U.S. or any other jurisdiction, including: the Arms Export Control Act (22 U.S.C. § 2278), the Export Controls Act of 2018 (50 U.S.C. § 4801 et seq.), the International Traffic in Arms Regulations (22 C.F.R. 120-130), the Export Administration Regulations (15 C.F.R. 730 et seq.), the Office of Foreign Assets Control Regulations (31 C.F.R. Chapter V), the Customs Laws of the United States (19 U.S.C. § 1 et seq.), the International Emergency Economic Powers Act (50 U.S.C. § 1701-1706), the U.S. Commerce Department antiboycott regulations (15 C.F.R. 760), the U.S. Treasury Department antiboycott requirements (26 U.S.C. § 999), any other export control regulations issued by the agencies listed in Supplement No. 3 to Part 730 of the Export Administration Regulations, or any applicable non-U.S. Applicable Laws of a similar nature.

4.27.2. Neither the Company nor any of the Representatives of the Company acting on its behalf is listed on the U.S. Department of the Treasury Office of Foreign Assets Control "Specially Designated Nationals and Blocked Persons."

4.27.3. The Company has policies that address and prescribe compliance practices appropriate to facilitate compliance with the Applicable Laws identified in this Section 4.27.

ARTICLE 5
REPRESENTATIONS AND WARRANTIES OF BUYER AND MERGER SUB

Buyer and Merger Sub represent and warrant to the Company, as of the date hereof and as of the Closing Date:

5.1. **Organization and Standing**. Each of Buyer and Merger Sub is a corporation duly organized, validly existing and in good standing under the Applicable Laws of its jurisdiction of incorporation. Merger Sub has taken and will take no actions other than in connection with effectuating such transaction.

5.2. **Power and Authority; Binding Agreement**. Each of Buyer and Merger Sub has all requisite corporate power and authority to execute and deliver this Agreement, to consummate the Merger and the other transactions contemplated hereunder, and to perform its obligations hereunder and thereunder. The execution and delivery by Buyer and Merger Sub of this Agreement, and the consummation by Buyer and Merger Sub of the Merger and the other transactions contemplated hereunder, have been duly authorized by all necessary corporate action on the part of Buyer and Merger Sub, and no other proceedings on the part of Buyer or Merger Sub are necessary to authorize this Agreement or to consummate the Merger and the other transactions contemplated hereunder other than (a) the filing of the Certificate of Merger with the office of the Secretary of State of the State of Delaware and (b) the filing of a premerger notification and report form under the HSR Act, if necessary. This Agreement has been duly executed and delivered by Buyer and Merger Sub and, assuming the due execution of this Agreement by the other Parties, constitutes a valid and binding obligation of Buyer and Merger Sub, enforceable against Buyer and Merger Sub in accordance with its terms, subject only to applicable bankruptcy, insolvency, reorganization,

fraudulent transfer, moratorium or similar Applicable Laws affecting creditors' rights generally and general principles of equity.

5.3. **Noncontravention**.

5.3.1. The execution and delivery by Buyer and Merger Sub of this Agreement, the consummation of the Merger and the other transactions contemplated by hereunder and the compliance by Buyer and Merger Sub with the provisions of this Agreement will not (i) result in the breach of any of the terms or conditions of, or constitute a default under or violate, as the case may be, the Constitutive Documents of Buyer or Merger Sub, or any material Contract to which Buyer or Merger Sub is bound, or by which any of their respective assets or properties may be affected or (ii) violate any Applicable Law or Judgment applicable to Buyer or Merger Sub, other than any such breaches, defaults or violations that individually or in the aggregate are not likely to impair in any material respect the ability of each of Buyer and Merger Sub to perform its obligations under this Agreement, or prevent or materially impede or delay the consummation of the Merger or any of the other transactions contemplated hereunder.

5.3.2. No consent, approval, order or authorization of, registration, declaration or filing with, or notice to, any Governmental Authority is required by or with respect to Buyer or Merger Sub in connection with the execution and delivery by Buyer and Merger Sub of this Agreement, the consummation by Buyer and Merger Sub of the Merger and the other transactions contemplated by this Agreement or the compliance by Buyer and Merger Sub with the provisions of this Agreement, except for (i) the filing of a premerger notification and report form under the HSR Act, (ii) the filing of the Certificate of Merger with the office of the Secretary of State of the State of Delaware and appropriate documents with the relevant authorities of other states in which the Company is qualified to do business and (iii) such other consents, approvals, orders, authorizations, registrations, declarations, filings and notices, the failure of which to be obtained or made individually or in the aggregate would not impair in any material respect the ability of each of Buyer and Merger Sub to perform its obligations under this Agreement, or prevent or materially impede or delay the consummation of the Merger or any of the other transactions contemplated hereunder.

5.4. **Financial Capability**. At the Closing, Buyer will have sufficient cash on hand or other sources of immediately available funds to enable it to pay the Purchase Price and any other amounts then payable by Buyer in connection with the transactions contemplated by this Agreement. After Closing, the Buyer will have sufficient access to cash on hand or other sources of immediately available funds to enable it to pay the other amounts payable by Buyer in connection with the transactions contemplated by this Agreement after the Closing, including the Contingent Payments.

5.5. **Brokers**. Buyer has not employed or entered into any Contract with any investment banker, broker, finder, consultant or intermediary in connection with the transactions contemplated by this Agreement, pursuant to which the Company Holders could be liable for the fee or commission of such investment banker, broker, finder, consultant or intermediary, or for any similar fee or commission in connection with the Merger, this Agreement or the other transactions contemplated hereunder.

5.6. **Litigation**. There is no Action pending against the Buyer of which the Buyer has received notice and, to the knowledge of the Buyer, no such Action has been threatened in writing against the Buyer that, in either case, would, individually or in the aggregate, (a) prevent or materially delay the consummation by the Buyer of the Merger or transactions contemplated by this Agreement or (b) otherwise prevent or materially delay performance by the Buyer of any of its material obligations in connection with the Merger.

5.7. **No Other Representations or Warranties**. Buyer hereby acknowledges and agrees that, except for the representations and warranties set forth in ARTICLE 4 (as qualified and limited by the Disclosure Schedule) or in any certificates delivered pursuant to this Agreement, (a) none of the Company or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, including, for the avoidance of doubt, the Company Holders, has made or is making any express or implied representation or warranty with respect to the Company, including with respect to any information provided or made available to the Buyer or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, or, except as otherwise expressly set forth in this Agreement, had or has any duty or obligation to provide any information to the Buyer or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person in connection with this Agreement, the transactions contemplated hereby or otherwise, and (b) none of the Company or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, including, for the avoidance of doubt, the Company Holders, will have or be subject to any liability or indemnification or other obligation of any kind or nature to Buyer or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, resulting from the delivery, dissemination or any other distribution to the Buyer or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, or the use by the Buyer or any of its respective Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, of any such other information provided or made available to any of them by the Company or any of its Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, including, for the avoidance of doubt, the Company Holders, including any information, documents, estimates, projections, forecasts or other forward-looking information, business plans or other material provided or made available to the Buyer or any of its respective Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, in "data rooms" (including the Data Room), confidential information memoranda, management presentations or otherwise in anticipation or contemplation of the transactions contemplated by this Agreement, and except for the express representations and warranties of the Company set forth in ARTICLE 4 (as qualified and limited by the Disclosure Schedule) and in any certificates

delivered pursuant to this Agreement, none of the Buyer or any of its respective Affiliates, shareholders, directors, officers, employees, agents, Representatives or advisors, or any other Person, is relying or has relied on any such information (including the accuracy or completeness thereof).

ARTICLE 6
CERTAIN COVENANTS

6.1. **Conduct of Business**.

6.1.1. From the date hereof to the Closing Date or the earlier termination of this Agreement pursuant to ARTICLE 9 (the "**Pre-Closing Period**"), the Company shall, except as expressly permitted by the terms of this Agreement or as Buyer may otherwise consent to in writing, (i) conduct the Business only in the Ordinary Course of Business in all material respects, (ii) use commercially reasonable efforts to keep its physical assets in good working condition, to preserve, maintain the value of, renew, extend, protect the confidential nature of and legal protections applicable to and keep in full force and effect all material Company Intellectual Property; (iii) use commercially reasonably efforts to preserve its relationships with third parties (including lessors, licensors, suppliers, consultants and patients) and employees, and (iv) comply in all material respects with all Applicable Laws and obligations under any Contracts of the Company.

6.1.2. Without limiting the generality of Section 6.1.1, except as expressly permitted by the terms of this Agreement or as disclosed by the Company in the Disclosure Schedule, during the Pre-Closing Period, the Company shall not, without the prior written consent of Buyer (which consent with respect to subsections (d) (f), (m) and (n) below and, solely with respect to such subsections, subsection (x) below, will not be unreasonably withheld, conditioned or delayed):

(a) amend its Constitutive Documents;

(b) declare, set aside or pay any dividend on, or make any other distribution (whether in cash, stock or property) in respect of, any Company Capital Stock to holders of Company Capital Stock from time to time outstanding;

(c) split, combine or reclassify any Company Capital Stock, or issue or authorize the issuance of any other securities in respect of, in lieu of or in substitution for shares of Company Capital Stock;

(d) purchase, redeem or otherwise acquire any shares of Company Capital Stock, or any option, warrant, call or right relating to such shares, interests or other securities (including any Company Stock Options), other than any repurchase of Company Common Stock, upon termination of any Company Personnel, pursuant to a right of repurchase in favor of the Company in any Contract to which the Company and such Company Personnel are each a party on the date hereof and for a per share purchase price not in excess of the per share purchase price at which such Company Personnel originally purchased the shares of Company Common Stock or as otherwise required by the applicable agreement;

(e) issue, grant, deliver or sell, or pledge or otherwise encumber or dispose of, any shares of Company Capital Stock, including any shares of Company Preferred Stock that are not treated as common stock for U.S. federal income tax purposes, or any securities convertible into, or exchangeable for, or any Company Stock Options, Company Restricted Stock or options, warrants, calls or rights to acquire or receive, any shares of Company Capital Stock, interests or other securities or any stock appreciation rights, phantom stock awards or other rights that are linked in any way to the price of the Company Common Stock or the value of the Company or any part thereof, other than the issuance of shares of Company Common Stock upon the exercise of Company Stock Options outstanding as of the date hereof and granted in accordance with the Company Stock Plan, in each case in accordance with the terms of such Company Stock Options and the Company Stock Plan; *provided* that, as a condition to such issuance, the Company obtains from each Person to whom the Company issues, grants, delivers, sells, pledges or otherwise encumbers or disposes of any shares of Company Capital Stock a Written Consent at the time of such issuance, grant, delivery, sale, pledge, encumbrance or disposition;

(f) (A) create, incur, assume, repay, prepay or otherwise discharge, satisfy or become liable in respect of any Indebtedness or other material Liabilities, or issue or sell, or amend, modify or change any term of, any debt securities or options, warrants, calls or other rights to acquire any debt securities of the Company, (B) create, incur, assume, repay, prepay or otherwise discharge, satisfy or become liable in respect of any other material Liabilities (other than Indebtedness), (C) guarantee or endorse any Indebtedness or other material Liabilities of another Person, (D) make any loans, advances or capital contributions to, or investments in, any Person other than the Company, (E) enter into any "keep well" or other Contract to maintain any financial statement condition of another Person, or (F) enter into any Contract having the economic effect of any of the foregoing;

(g) sell, license, mortgage, transfer or otherwise encumber or subject to any Lien other than a Permitted Lien, or otherwise dispose of (A) any properties or assets, including the Leased Properties, which are material, individually or in the aggregate, to the Company (excluding any sale of furniture, fixtures or equipment that does not materially impact the conduct of the Company's business) or (B) in any case, any Company Intellectual Property (or otherwise allow to lapse any of its rights under any such Company Intellectual Property);

(h) acquire or agree to acquire by merging or consolidating with, or by purchasing all or a substantial portion of the assets of, or by purchasing all or a substantial portion of the Capital Stock of, or by any other manner, any business

or any other Person or any division thereof;

(i) make, change or revoke any Tax election, elect or change any method of accounting for Tax purposes, change any Tax accounting period, amend any Tax Return, surrender any right to claim a refund of Taxes, settle or compromise any Action in respect of Taxes, voluntarily approach any Taxing Authority in respect of prior year Taxes (including through any voluntary disclosure process), consent to any extension or waiver of the statutory period of limitations applicable to any Action in respect of Taxes, or enter into any contractual obligation in respect of Taxes with any Governmental Authority or other party;

(j) except as required to comply with Applicable Law or any Contract or Plan in effect on the date of this Agreement and disclosed to Buyer, enter into, adopt, amend, or terminate any Plan (or any Contract, plan, program, arrangement, commitment or practice that would be a Plan if it were in effect as of the date hereof), including for the avoidance of doubt, taking action to accelerate or waive vesting or forfeiture conditions of any Company Stock Options or Company Restricted Stock outstanding as of the date of this Agreement;

(k) hire or engage any individual with an annual compensation in excess of [*], or terminate (other than for cause) the employment or service of any Company Personnel;

(l) increase the compensation or benefits payable or provided to any Company Personnel, or accelerate the vesting or payment of any compensation or benefits;

(m) enter into any Contract that would be deemed a Material Contract in accordance with Section 4.13.1;

(n) waive, release or assign any material rights or claims under, fail to take a required action under, fail to exercise a right of renewal under, or commit a material breach of, or modify, amend or terminate any Material Contract;

(o) pay, discharge, settle or satisfy (x) any Actions of shareholders or any shareholder litigation relating to the Merger or any other transaction contemplated by this Agreement, (y) any other Actions or (z) any other Liabilities, in the case of clause (z), except (i) as does not exceed [*] in the aggregate, and (ii) other than the payment, discharge or satisfaction in the Ordinary Course of Business or as required by Liabilities of the Company reserved against on the Most Recent Balance Sheet or incurred since the Most Recent Balance Sheet Date in the Ordinary Course of Business and any expenses relating to the transactions contemplated by this Agreement;

(p) commence, participate or agree to commence or participate in any plan or arrangement for the complete or partial dissolution, liquidation, merger, consolidation, restructuring, recapitalization, or other reorganization of the Company (other than the Merger), including any bankruptcy, winding up, examinership, insolvency or similar proceeding in respect of the Company;

(q) create any Subsidiary of the Company;

(r) fail to (A) maintain the Company's corporate existence, due organization and good standing under the Applicable Laws of the State of Delaware and (B) be duly qualified or licensed to do business and be in good standing in each jurisdiction in which the nature of the Company's business or the ownership, leasing or operation of its properties makes such qualification or licensing necessary, except to the extent such failure to be duly qualified, licensed or in good standing described in this clause (B) would not reasonably be expected to result in a Material Adverse Change;

(s) employ or enter into any Contract with any investment banker, broker, finder or advisor in connection with the Merger or the other transactions contemplated by this Agreement, other than any whose fees and expenses are deducted from the Closing Payment pursuant to the definition of the Closing Payment;

(t) violate any Applicable Law or fail to comply with any Judgment that would reasonably be expected to be material to the Company;

(u) make or engage in any offering of any securities of the Company;

(v) negotiate, enter into, amend or extend any collective bargaining or other Contract with a Union or other employee representative body;

(w) grant any warrant; or

(x) authorize any of, or commit, resolve or agree, whether in writing or otherwise, to take any of, the actions prohibited in Sections 6.1.2(a) through (w).

6.2. **Access**.

6.2.1. The Company shall (i) make available for inspection by Buyer and its Representatives all of the Company's properties, assets, books of accounts, records (including the work papers of the Company's independent accountants), any and all data and Intellectual Property related to the Products, and Contracts and any other materials requested by any of them relating to the Company and its existing and prospective businesses and assets and Liabilities at such times as Buyer

may reasonably request; (ii) make available to Buyer and its Representatives the officers, other senior management and Representatives of the Company for interviews, at such times as Buyer and its Representatives may reasonably request, to verify and discuss the information furnished to Buyer and its Representatives and otherwise discuss the Company's existing and prospective businesses and assets and Liabilities; and (iii) authorize the Company's lenders, creditors, lessors, lessees, licensors, licensees, employees, developers, contractors, vendors, suppliers, Affiliates or other Persons having a business relationship with the Company to respond to appropriate inquiries from Buyer regarding the Company's existing and prospective businesses and assets and Liabilities. Any and all such inspections, interviews, and access for investigations shall be conducted during normal business hours and in a manner that does not unreasonably interfere with the conduct of the business of the Company or such third party.

6.2.2. Not later than five Business Days following receipt of any management letter or other similar communication from the Company's independent certified accounting firm or other independent auditors, the Company shall deliver a copy of such letter or communication to Buyer.

6.2.3. Any access provided to the Buyer or information provided by or on behalf of the Company shall not constitute any expansion of or additional representations or warranties of the Company beyond those specifically set forth in this Agreement. The Buyer will hold any such information that is Confidential Information in confidence in accordance with this Agreement. Notwithstanding the foregoing, the Company shall not be required to provide the Buyer access to or disclose information where such access or disclosure would result in the loss of any attorney-client privilege or be prohibited under applicable law or by the terms of any agreement to which the Company is a party as of the date of this Agreement.

6.3. **Notification**. From the date hereof until the earlier of the Closing or the termination of this Agreement pursuant to ARTICLE 9, the Company shall promptly disclose to Buyer and its Representatives in writing: (i) any circumstance, event or action the existence, occurrence or taking of which has resulted in or would reasonably be expected to result in the failure of any of the conditions set forth in Sections 3.1 and 3.2 to be satisfied; (ii) any notice or other communication from any Person alleging that the consent of such Person is or may be required in connection with the transactions contemplated by this Agreement; (iii) any notice or other communication from any Governmental Authority in connection with the transactions contemplated by this Agreement; or (iv) any Action commenced or, to the Company's knowledge, threatened against, relating to or involving or otherwise affecting the Company that, if pending on the date of this Agreement, would have been required to have been disclosed pursuant to Section 4.15 or that relates to the consummation of the transactions contemplated by this Agreement. Buyer's receipt of information pursuant to this Section 6.3 or otherwise shall not operate as a waiver (including with respect ARTICLE 3 or ARTICLE 8) or otherwise affect any representation, warranty or covenant in this Agreement.

6.4. **Tax Matters**.

6.4.1. The Company shall timely prepare and file any Tax Return required to be filed by the Company on or before the Closing Date, and timely pay any Tax reflected thereon. The Company will not take any position on such Tax Returns that is inconsistent with past custom and practice unless otherwise required by applicable Tax Law.

6.4.2. Buyer will prepare any Tax Return of the Company for or including a Pre-Closing Tax Period (including a Straddle Tax Period Tax Return) required to be filed after the Closing Date. If the Company Holders would be expected to have an indemnification obligation under this Agreement for Taxes in respect of a Pre-Closing Tax Period or Straddle Tax Period Tax Return filed by Buyer pursuant to this Section 6.4.2, Buyer shall (i) deliver a copy of such Tax Return along with accompanying work papers to the Shareholders' Representative not less than 45 days prior to the due date (as extended, in applicable) for the filing of such Tax Return (the "**Due Date**"), in the case of income Tax Returns, and in such period of time prior the Due Date as the Buyer shall reasonably determine to be practicable in the case of other Tax Returns, and (ii) if, within 30 days of receipt of such copy, the Shareholders' Representative notifies Buyer that it objects to any item reflected on such Tax Return which item may affect the Company Holders' liability for Taxes under this Agreement, Buyer shall, prior to the Due Date, consider in good faith all reasonable changes to such item or items requested by the Shareholders' Representative. All Tax Returns for a Pre-Closing Tax Period or Straddle Tax Period shall be filed in accordance with applicable Tax Law and, where not unreasonable, consistent with past practice.

6.4.3. Any Transfer Taxes shall be borne and paid [*] by the Buyer and [*] by the Company Holders. The Buyer shall timely file or cause to be filed all Tax Returns permitted to be filed by the Buyer in respect of Transfer Taxes as may be required to comply with the provisions of Tax Laws and, if required by applicable Law, the Company Holders will join in the execution of any such Tax Returns and other documentation. The party required to do so under Applicable Law shall timely file or cause to be filed all Tax Returns required to be filed by the Company Holders in respect of Transfer Taxes and, if required by applicable Law, the Buyer will join in the execution of any such Tax Returns and other documentation. The Buyer and the Company Holders, as applicable, shall reimburse the other party for any amounts paid by the Buyer or the Company Holders that are the responsibility of the other party pursuant to this Section 6.4.3.

6.4.4. The Company shall cause the provisions of any Tax allocation, indemnity or sharing Contract (other than Contracts that are not primarily related to Taxes entered into in the ordinary course of business) to which the Company is a party to be terminated on or before the Closing Date such that there is no liability under any such Contract following the Closing.

6.4.5. If the Company fails to deliver the certificate set forth in Section 3.2.4 and the Merger is consummated, then Buyer and the Surviving Corporation shall be permitted to treat the Company as a U.S. real property holding corporation as defined

in Section 897 of the Code and deduct from any payments made in accordance with this Agreement the amount of any tax withholding that is required under applicable Tax Law.

6.4.6. The Buyer and the Shareholders' Representative shall provide each other with such cooperation and assistance as may be reasonably requested by either of them in connection with the preparation of any Tax Return, any audit or other examination by any Taxing Authority, or any judicial or administrative proceedings relating to liability for Taxes and each will provide the other with any reasonably requested records or information which may be relevant to such Tax Return, audit, or examination, proceedings or determination.

6.4.7. Buyer shall promptly notify the Shareholders' Representative in writing upon receipt by Buyer or any of its Affiliates of notice of any Tax audit, assessment or other claim by a Taxing Authority which may affect the Taxes of the Company for any period ending on or before the Closing Date or any Straddle Tax Period, in each case, for which the Company Holders would be liable pursuant to Section 8.2. The Shareholders' Representative shall promptly notify Buyer in writing upon receipt by any Company Holder or any of their Affiliates of notice of any pending, proposed, threatened or actual Tax audit, assessment or other claim by a Taxing Authority for any period of or relating to the Company. To the extent that the Company Holders are liable pursuant to Section 8.2 for Taxes that could be payable as a result of such audit or other proceeding and such audit or other proceeding relates solely to a period ending on or before the Closing Date, the Shareholders' Representative shall have the right to control the defense in such audit or other proceeding and to employ counsel and other advisors of its choice at the Company Holders' expense; *provided, however,* that Buyer (along with counsel and other advisors of its choice) shall be entitled to participate in such audit or proceeding; and *provided*, further, that the Shareholders' Representative shall not settle or compromise any such audit or proceeding without Buyer's prior written consent (not to be unreasonably withheld, conditioned or delayed). In the event of any audit or proceeding relating to a Straddle Tax Period, Buyer shall be entitled to control the defense employing counsel and other advisors of its choice at its expense, *provided* that the Shareholders' Representative (along with counsel and other advisors of its choice) shall be entitled to participate in such defense to the extent that the Company Holders are expected to have a material liability for Taxes pursuant to Section 8.2. Buyer shall not agree to settle any tax claim for any period ending on or before the Closing Date or any Straddle Tax Period, in each case, which may affect the Taxes for which the Company Holders or their Affiliates would be liable under Section 8.2 without the prior written consent of the Shareholders' Representative, which consent shall not be unreasonably withheld, conditioned or delayed. Buyer shall be entitled to control all other Tax audits, deficiencies, claims, assessments or other proceedings.

6.4.8. For purposes of this Agreement, all Taxes of the Company that relate to a Straddle Tax Period shall be apportioned between the Company Holders and the Buyer as follows: (i) the amount of any Taxes of the Company not based upon or measured by income, activities, events, payments, the level of any item, gain, receipts, proceeds, profits or other similar items for Tax periods (or the portion thereof) ending on or before the Closing Date will be deemed to be the amount of such Taxes for the entire Tax period multiplied by a fraction, the numerator of which is the number of days in the Tax period ending on the Closing Date and the denominator of which is the number of days in such Straddle Tax Period, and (ii) the determination of any other Taxes for the portion of the year or period ending on, and the portion of the year or period beginning after, the Closing Date shall be determined by assuming that the Company had a taxable year or period which ended at the close of business on the Closing Date, except that exemptions, allowances, deductions or any other items that are calculated on an annual or periodic basis, shall be prorated on the basis of the number of days in the annual period elapsed through the Closing Date as compared to the number of days in the annual period elapsing after the Closing Date.

6.4.9. With respect to any income tax period ending on the Closing Date (including without limitation any U.S. federal income tax period that ends on the Closing Date by reason of the Company joining a consolidated group that includes Buyer), an interim closing of the books approach shall be used for apportioning income to the period ending on the Closing Date to the maximum extent permitted by applicable Tax Law.

6.4.10. The Company Holders shall be entitled to any refunds (including any interest paid thereon) of Taxes of the Company that were (i) paid by the Company prior to the Closing Date or (ii) indemnified by the Company Holders pursuant to an obligation under Article VIII, in each case to the extent attributable to taxable periods (or portions thereof) ending on or before the Closing Date, but only to the extent such refunds were not taken into account in Working Capital (as finally determined) and are not attributable to the carryback of a net operating loss, deduction or other Tax attribute of the Company from a period (or portion thereof) beginning after the Closing Date, and in each case shall be net of any Tax or other reasonable out-of-pocket costs, fees, and expenses payable or incurred by the Buyer or its Affiliates in connection with the receipt or payment over of such refund. The Buyer and its Affiliates shall reasonably cooperate with the Shareholders' Representative in obtaining any refund to which the Company Holders are entitled under this Section 6.4.10. The Buyer shall promptly forward to or reimburse the Company Holders for any amounts due to the Company Holders pursuant to this Section 6.4.10 after receipt thereof (or credit of such refund against other Taxes).

6.4.11. Subject to Sections 6.4.2 and 6.4.7 and except where required by Tax Law or resolution of a Tax audit, the Buyer shall not (and shall not cause or permit the Company to) amend, re-file or otherwise modify any Tax Return filed pursuant to Section 6.4.1 or 6.4.2, initiate any voluntary disclosure, or agree to the waiver or any extension of the statute of limitations, in each case, for the Company with respect to any Taxable period (or portion thereof) ending on or before the Closing Date, without the prior written consent of the Shareholders' Representative (which consent shall not be unreasonably withheld, conditioned or delayed).

6.5. **Insurance**. The Company shall keep all insurance policies set forth on Section 4.17 of the Disclosure Schedule, or comparable replacements therefor, in full force and effect through the Effective Time and such that such insurance policies will be in full force and effect immediately following the Effective Time; *provided*, *however*, that any such insurance policy may be amended or modified or substituted with another insurance policy (including a change in insurance carriers), so long as the coverage and limitations provided by such amended, modified or substituted insurance policy are materially the same as in the respective policy set forth in Section 4.17 of the Disclosure Schedule.

6.6. **Exclusivity**.

6.6.1. The Company shall not, and shall cause its employees, officers, directors, shareholders, Representatives and its Affiliates not to, directly or indirectly through another Person, (i) solicit, initiate or encourage, or take any other action designed to, or which would reasonably be expected to, facilitate, any Transaction Proposal or (ii) enter into, continue or otherwise participate in any discussions or negotiations regarding, or furnish to any Person any information, enter into an agreement in respect of, or otherwise cooperate in any way with, any Transaction Proposal. The Company shall, and shall direct its employees, officers, directors, shareholders, Representatives and Affiliates to, (i) immediately cease and cause to be terminated all existing discussions or negotiations with any Person conducted heretofore with respect to any Transaction Proposal and (ii) promptly after the date hereof request the prompt return or destruction of all confidential information previously furnished to such Person(s) for the purpose of evaluating a possible Transaction Proposal.

6.6.2. If the Company or any of its employees, officers, directors, or Representatives receives any Transaction Proposal, the Company shall promptly advise Buyer orally and in writing that the Company has received such Transaction Proposal and the material terms and conditions of any such Transaction Proposal (including any changes thereto) to Buyer. For the avoidance of doubt, the Company's covenant under Section 6.6.1 shall not be relieved or diminished upon the receipt of a Transaction Proposal.

6.7. **Indemnification of Officers and Directors**.

6.7.1. Subject to Section 8.10, from and after the Effective Time, Buyer shall cause the Surviving Corporation to fulfill and honor in all respects the obligations of the Company pursuant to any indemnification provisions under the Constitutive Documents of the Company as in effect on the date of this Agreement and pursuant to any indemnity agreements between the Company and such Person as in effect on the date of this Agreement (the Persons entitled to be indemnified pursuant to such provisions, and all other current and former directors and officers of the Company, being referred to collectively as the "**D&O Indemnified Parties**"). Buyer shall cause the Constitutive Documents of Merger Sub and the Surviving Corporation to contain provisions with respect to indemnification and exculpation from liability that are substantially similar to those set forth in the Company's Constitutive Documents on the date of this Agreement, which provisions shall not be amended, repealed or otherwise modified for a period of six years after the Effective Time in any manner that could adversely affect the rights thereunder of any D&O Indemnified Party.

6.7.2. Solely to the extent the Company has bound a directors' and officers' liability insurance coverage for the D&O Indemnified Parties prior to the Effective Time, the Company shall obtain, prior to the Effective Time, a prepaid extended non-cancelable reporting period endorsement or a run-off policy under the Company's existing directors' and officers' liability insurance coverage for the D&O Indemnified Parties that shall provide such D&O Indemnified Parties with coverage for six years following the Effective Time of not less than the existing coverage and have other terms not materially less favorable to the insured Persons than the directors' and officers' liability insurance coverage presently maintained by the Company (the "**D&O Tail Policy**"). Buyer shall and shall cause the Company to, (i) upon the request of Shareholders' Representative, make any claim for coverage under any such policy and take any action reasonably requested by Shareholders' Representative to obtain reimbursement for covered losses under any such policy or to otherwise enforce any such policy or any provision thereof, and (ii) notify Shareholders' Representative of any material development which affects or limits the coverage available under the D&O Tail Policy. Buyer shall be solely responsible for the cost of the D&O Tail Policy, including the amount of the premium required to be paid for the D&O Tail Policy; provided, that Buyer shall not be required to pay an aggregate amount for the D&O Tail Policy in excess of [*] of the last annual premium paid by the Company prior to the Closing. Buyer shall, and shall cause the Surviving Corporation to, maintain such policy in full force and effect, and continue to honor the obligations thereunder.

6.7.3. This Section 6.7 shall survive the consummation of the Merger and the Effective Time, is intended to benefit and may be enforced by the Company, Buyer, the Surviving Corporation and the D&O Indemnified Parties, and shall be binding on all successors and assigns of Buyer and the Surviving Corporation.

6.7.4. The provisions of this Section 6.7 are intended to be in addition to the rights otherwise available to the D&O Indemnified Parties by law, charter, statute, by-law or agreement, and shall operate for the benefit of, and shall be enforceable by, each of the D&O Indemnified Parties, their heirs and their representatives.

6.8. **Release of Claims**. Effective upon the Closing, except with respect to a claim arising out of this Agreement or any ancillary agreement, document or instrument to be delivered in connection herewith and therewith (other than in respect of claims of each Company Holder described in subclause (B) below), each Company Holder hereby unconditionally and irrevocably waives, fully releases and forever discharges the Company, Buyer, the Surviving Corporation and their past and present directors, officers, employees, agents, predecessors, successors, assigns, equityholders, partners, insurers and Affiliates (the "**Released Parties**") from, and covenants not to (a) sue or (b) participate in any civil action against any of the Released

Parties for, any and all Liabilities and Actions of any kind or nature whatsoever, in each case whether absolute or contingent, liquidated or unliquidated and known or unknown (the "**Claims**") with respect to (A) facts and circumstances existing at or prior to the Effective Time that have been or could be asserted against a Released Party in connection with the transactions contemplated by this Agreement, and (B) the allocation of the Closing Payment and the Contingent Payments pursuant to this Agreement (including with respect to the timing and the amount of such payments), and, in each case ((A) and (B)), such Company Holder shall not seek to recover any amounts in connection therewith or thereunder from such Released Parties. Such released Liabilities shall include any right to recover against the Released Parties for any indemnification claims made against or paid by a Company Holder pursuant to ARTICLE 8. Each Company Holder understands that this is a full and final release of all claims, demands, causes of action and Liabilities of any nature whatsoever, whether or not known, suspected or claimed, that could have been asserted in any legal or equitable proceeding against the Released Parties, except as expressly set forth in this Section 6.8. For the avoidance of doubt, the foregoing release shall not apply and none of the following shall be released by each Company Holder: (i) if the Company Holder is an employee of any of the Released Parties, Claims for any benefit, wages or salary earned by the Company Holder arising out of or related to the Company Holder's employment by any of the Released Parties to the extent earned and unpaid, (ii) Claims and rights of the Company Holder for indemnification and reimbursement by any of the Released Parties under the Constitutive Documents or under any Contract entered into by any of the Released Parties and the Company Holder (to the extent such Contract is set forth on Section 4.13.1(q) of the Disclosure Schedule), (iii) Claims of the Company Holder as a service provider or licensor of any of the Released Parties and (iv) Claims of the Company Holder to its right to receive the Closing Payment or Contingent Payments, as appropriate, in accordance with the terms of this Agreement, *provided* that, in each case, the Company Holder shall be subject to the no-circular recovery provisions set forth in Section 8.10. To the extent permitted by Applicable Law, each Company Holder expressly waives the benefit of any Applicable Law, which, if applied to the release set forth in this Section 6.8, would otherwise exclude from its binding effect any Claim not known by such Company Holder at the Effective Time to exist. Each Company Holder represents that it is not aware of any Claim by it other than the Claims that are waived, released and forever discharged by this Section 6.8. For the avoidance of doubt, the release set forth in this Section 6.8 is an integral part of the Merger and the transactions contemplated by this Agreement and without such release, none of the Company, Buyer nor Merger Sub would have entered into this Agreement. Further, nothing contained in this Section 6.8 shall be construed to prohibit a Company Holder from filing a charge with or participating in any investigation or proceeding conducted by the federal Equal Employment Opportunity Commission or a comparable state or local agency, *provided*, *however*, that each Company Holder hereby agrees to waive its, his or her right to recover monetary damages or other individual relief in any such charge, investigation or proceeding or any related complaint or lawsuit filed by the Company Holder or by anyone else on its, his or her behalf. Notwithstanding anything to the contrary in this Section 6.8, [*].

6.9. **No Right to Control Company Pre-Closing**. Nothing contained in this Agreement is intended to give Buyer, directly or indirectly, the right to control or direct the Company's operations prior to the Effective Time. Prior to the Effective Time, the Company shall exercise, consistent with the terms and conditions of this Agreement, complete control and supervision over its respective businesses, assets and properties.

6.10. **Confidentiality**.

6.10.1. Each Party (the "**Receiving Party**") receiving any Confidential Information of the other Party (the "**Disclosing Party**") hereunder will: (i) keep the Disclosing Party's Confidential Information confidential; (ii) not publish, or allow to be published, and will not otherwise disclose, or permit the disclosure of, the Disclosing Party's Confidential Information; and (iii) not use, or permit to be used, the Disclosing Party's Confidential Information for any purpose, except, in each case, to the extent expressly permitted under this Agreement or otherwise agreed in writing. Without limiting the generality of the foregoing, to the extent that the Disclosing Party provides any Confidential Information owned by any third party to the Receiving Party, the Receiving Party will handle such Confidential Information in accordance with the terms and conditions of this Section 6.10 applicable to a Receiving Party.

6.10.2. **Authorized Disclosure**. Notwithstanding Section 6.10.1, each Party may disclose the other Party's Confidential Information to the extent such disclosure is reasonably necessary to:

(a) prosecute or defend litigation;

(b) exercise its rights and perform its obligations hereunder;

(a) evaluate this Agreement, solely in the case of disclosure to its advisors (including financial advisors, attorneys and accountants), actual or potential acquisition partners, financing sources or investors and underwriters on a need-to-know basis; *provided* that such disclosure is covered by terms of confidentiality and non-use similar to or no less stringent than those set forth herein (which may include professional ethical obligations); or

(b) comply with Applicable Law.

If a Party deems it reasonably necessary to disclose Confidential Information belonging to the other Party pursuant to Section 6.10.2(a) or Section 6.10.2(d), the Disclosing Party will, to the extent possible, give reasonable advance written notice of such disclosure to the other Party and take reasonable measures to ensure confidential treatment of such information. In addition to the foregoing, after the Closing, Buyer may disclose the Company's Confidential Information to third parties in connection with the actual or potential research, development, manufacture or commercialization of Products; *provided* that such disclosure is covered by terms of confidentiality and non-use no less stringent than those set

forth herein. Notwithstanding anything to the contrary contained herein, in no event may either Party disclose the other Party's Confidential Information to any third party (including any of the Company's investors, collaborators or licensees) engaged in the research, development, manufacture or commercialization of pharmaceutical products. Each Party shall be responsible for any breach of this Section 6.10 by any of its disclosees that would breach this Agreement if made by such Party. Notwithstanding anything in this Agreement to the contrary, following Closing, subject to confidentiality restrictions set forth in the UT Agreements, the Shareholders' Representative shall be permitted to disclose information as required by law or to employees, advisors, agents or consultants of the Shareholders' Representative and to the Company Holders, in each case who have a need to know such information, provided that such persons are subject to confidentiality obligations with respect thereto no less stringent than those set forth herein.

6.11. **Restrictive Covenants**.

6.11.1. The Restricted Individuals each agree that he or she shall not, and he or she shall not cause or encourage any of his or her Affiliates to, directly or indirectly (whether as owner, investor, principal, agent, consultant, independent contractor, employee, partner or otherwise), engage in or compete with, or take active steps preparatory to engaging in or competing with, all or any portion of the Business, other than on behalf of Buyer or the Company, for a period equal to [*]. Any breaches or violations by any of the Restricted Individuals of this Section 6.11.1 shall be deemed a Company Holder Indemnity Event. No later than 2 Business Days following the date hereof, the Company shall deliver to Buyer restricted activities agreements, in the form attached hereto as Exhibit G (the "**Restricted Activities Agreement**") executed by each Restricted Individual, to be effective as of the Closing.

6.11.2. The Restricted Individuals each agree that (i) his or her agreement to the covenants contained in this Section 6.11 is a material condition of Buyer's willingness to enter into this Agreement and consummate this Agreement, the Closing and the transactions contemplated hereunder, (ii) the covenants contained in Section 6.11 are necessary to protect the goodwill, confidential information, trade secrets and other legitimate interests of the Company and Buyer, (iii) in addition and not in the alternative to any other remedies available to it, Buyer shall be entitled to preliminary and permanent injunctive relief against any breach or threatened breach by any Restricted Individual of any such covenants, without having to post bond, (iv) the Restricted Period applicable to a Restricted Individual shall be tolled, and shall not run, during the period of any breach by such Restricted Individual of any such covenants, and (v) if the final judgment of a court of competent jurisdiction declares that any term or provision of this Section 6.11 is invalid or unenforceable, the Parties agree that the court making the determination of invalidity or unenforceability shall reduce the scope, duration, or area of the term or provision, or delete specific words or phrases, or replace any invalid or unenforceable term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement will be enforceable as so modified after the expiration of the time within which the judgment may be appealed.

6.11.3. [*].

6.12. [*] **Deferred Consideration Agreement; Deferred Consideration Acknowledgments; Designated Individual Agreements**.

6.12.1. No later than 2 Business Days following the date hereof, the Company shall deliver to Buyer the agreement in the form attached hereto as Exhibit H (the "[*] **Deferred Consideration Agreement**"), executed by the [*], to be effective as of the Closing.

6.12.2. No later than 2 Business Days following the date hereof, the Company shall deliver to Buyer agreements in the form attached hereto as Exhibit I (the "**Deferred Consideration Acknowledgments**"), executed by each Deferred Holder who holds Designated Company Restricted Stock, to be effective as of the Closing.

6.12.3. No later than 2 Business Days following the date hereof, the Company shall deliver to Buyer agreements in the form attached hereto as Exhibit J (the "**Designated Individual Agreements**"), executed by each Designated Individual, to be effective as of the Closing.

6.13. **Disclosure Statement**. The Company has delivered a notice and disclosure statement (prepared in consultation with and approval by the Buyer in writing prior to the date hereof) to the Company Shareholders of record as of the date hereof, pursuant to Sections 228(e) and 262(d)(2) of the DGCL (the "**Disclosure Statement**"), which complies with all Applicable Law and includes (a) a summary of the Merger, this Agreement and the transactions contemplated hereby and (b) a statement that appraisal rights are available for the shares of Company Capital Stock pursuant to Section 262 of the DGCL (including a copy of Section 262 of the DGCL).

6.14. **Section 280G**. The Company shall not later than three Business Days prior to the Closing Date use reasonable efforts to obtain, shareholder approval (in accordance with the requirements of Section 280G) of any payments or benefits paid or payable by the Company or any of its Affiliates that would, absent shareholder approval, reasonably be expected to be excess parachute payments within the meaning of Section 280G ("**Section 280G Payments**"). Prior to obtaining such shareholder approval, the Company (or its applicable Affiliate) shall use commercially reasonable efforts to obtain waivers from any disqualified individuals (within the meaning of Section 280G), such that unless such payments and benefits to such individuals are approved by the shareholders in the manner required under Section 280G, no such payments and benefits shall be paid or provided. Prior to the Closing Date, the Company shall deliver to Buyer written certification that (i) the requisite

shareholder approval was obtained with respect to any Section 280G Payments that were subject to the shareholder vote, (ii) the shareholder approval of Section 280G Payments was not obtained and, as a consequence, such payments and benefits shall not be paid or provided to any affected individual who had duly executed a waiver of those payments and benefits to the extent that such payments and benefits would cause any amounts to constitute Section 280G Payments, and/or (iii) commercially reasonable efforts were used, however, the Company was unable to obtain waivers or the requisite shareholder approval. Copies of all disclosures, waivers, consents, and shareholder voting materials used in connection with the foregoing shall be provided to the Buyer at least five days in advance of distribution to shareholders or the disqualified individuals, as applicable, for Buyer's review and approval.

ARTICLE 7
CERTAIN ADDITIONAL COVENANTS

7.1. **Commercially Reasonable Efforts**. As of the date hereof and until the earlier of Closing or termination of this Agreement, the Parties agree that time is of the essence with respect to each Party's covenants and obligations under this Agreement, and each Party (other than the Shareholders' Representative) shall use commercially reasonable efforts to take, or cause to be taken, all actions and to do, or cause to be done, and to assist and cooperate the other Parties in doing, all things, in each case necessary or advisable to permit the consummation of the Merger and the other transactions contemplated by this Agreement, including the actions to be taken by the Company as set forth in Section 3.2, obtaining any consents, authorizations, approvals, permits, licenses, or governmental authorizations, estoppel certificates and filings under any Applicable Law (including any applicable filings and receiving termination or expiration of any waiting periods under the HSR Act and any applicable foreign competition, merger control, antitrust or similar Applicable Law) required to be obtained or made by the Company which may be necessary or appropriate to permit the consummation of the Merger and the other transactions contemplated by this Agreement. Without limiting the foregoing, in the event that (a) any Action of the type and having any of the effects described in Section 3.1.2 or Section 3.1.3 is pending or threatened or (b) any other legal restraint, Applicable Law or prohibition that could reasonably be expected to result, directly or indirectly, in any of the effects described in Section 3.1.2 or Section 3.1.3 is in effect, then each Party (other than the Shareholders' Representative) shall use commercially reasonable efforts to have such Action or other legal restraint, Applicable Law or prohibition vacated, reversed or made to be no longer in effect.

7.2. **Publicity**.

7.2.1. Buyer may issue a press release regarding the signing of this Agreement on a date to be determined by Buyer after consultation with the Company as to both the content and timing of such press release. Except (i) as set forth in the preceding sentence and (ii) in accordance with the terms and subject to the conditions of Section 7.2.2, no Party will make any public announcement regarding this Agreement without the prior written approval of the other Parties; provided, that, following the press release contemplated by the first sentence of this Section 7.2.1.

7.2.2. Each Party may disclose the terms of this Agreement to the extent required to comply with Applicable Law, including the rules and regulations promulgated by the United States Securities and Exchange Commission or any equivalent governmental agency in any country; *provided* that such Party will provide the other Parties a reasonable opportunity to review such disclosure and reasonably consider the other Parties' comments regarding confidential treatment sought for such disclosure. Notwithstanding anything in this Agreement to the contrary, after Closing and the public announcement of the Merger, the Shareholders' Representative shall be permitted to publicly announce that it has been engaged to serve as the Shareholders' Representative in connection with the Merger as long as such announcement does not disclose any of the other terms of the Merger or other transactions contemplated herein.

7.2.3. Notwithstanding anything to the contrary herein, any Company Holder shall be permitted to disclose the terms of this Agreement and the transactions contemplated hereby to its Affiliates and Representatives and it and their respective past, current or prospective limited partners or other investors, subject to customary confidentiality obligations no less restrictive than the obligations set forth in Section 6.10 of this Agreement.

7.3. **Antitrust Notification**.

7.3.1. The Parties (other than the Shareholders' Representative) shall, (i) as promptly as practicable, and in any event no more than ten Business Days, following the date hereof, file with the FTC and the DOJ the premerger notification and report form required as a result of the Merger and the other transactions contemplated hereby, and shall include any supplemental information requested in connection therewith, pursuant to the HSR Act and (ii) as promptly as practicable thereafter, make such other filings as are necessary or advisable in other jurisdictions in order to comply with all Applicable Laws relating to competition, merger control or antitrust and shall promptly provide any supplemental information requested by applicable Governmental Entities relating thereto. Any such filing, notification and report form and supplemental information shall be in substantial compliance with the requirements of the HSR Act or such other Applicable Law. The Parties (other than the Shareholders' Representative) shall work together and shall furnish to one another such necessary information and reasonable assistance as the other may request in connection with its preparation of any filing or submission which is necessary under the HSR Act or such other Applicable Law. The Parties (other than the Shareholders' Representative) shall keep one another apprised of the status of any communications with, and any inquiries or requests for additional information from, the FTC, the DOJ or any other applicable Governmental Authority, and shall comply promptly with any such inquiry or request.

7.3.2. From and after the date hereof, the Parties (other than the Shareholders' Representative) shall use commercially reasonable efforts to obtain any clearance required under the HSR Act or such other Applicable Law for the Merger and the other transactions contemplated hereby (any such clearance, an "**Antitrust Approval**"), including replying at the earliest practicable date to any requests for information received from the FTC or DOJ pursuant to the HSR Act and making any permitted request for early expiration or termination of the applicable waiting periods under the HSR Act as soon as possible. For purposes of this Section 7.3.2 and of Section 7.1, and in the interests of clarity, Buyer shall not be required to agree to any prohibition, limitation or other requirement of the type set forth in clauses (i) through (iii) of Section 3.1.3. Neither Buyer, Merger Sub, nor any of their Affiliates shall acquire or agree to acquire, by merging with or into or consolidating with, or by purchasing a portion of the assets of or equity in, any business or any corporation, partnership, association or other business organization or division thereof, if the entering into of a definitive agreement relating to, or the consummation of such acquisition, merger or consolidation would reasonably be expected to create material risk of any Governmental Authority seeking or entering an order requiring any prohibition, limitation or other requirement of the type set forth in clauses (i) through (iii) of Section 3.1.3.

7.3.3. In the event that any Antitrust Approval is obtained but expires prior to Closing, upon Buyer's request, the Parties (other than the Shareholders' Representative) shall, as promptly as practicable (but in no event later than ten Business Days) thereafter, make such filings as are necessary or advisable to again obtain such Antitrust Approval, in accordance with Section 7.3.1, and shall otherwise comply with Section 7.3.1 as if such expired Antitrust Approval had never been obtained.

7.4. **Expenses**. Whether or not the Merger and the other transactions contemplated by this Agreement are consummated, and except as otherwise set forth in this Agreement, each of the Company, Buyer and Merger Sub shall bear its own fees and expenses incurred or owed in connection with the Merger, this Agreement and the other transactions contemplated hereby; [*].

7.5. **Further Assurances**. Each Party agrees to execute, acknowledge and deliver such further instruments, and to do all such other acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

7.6. **Data Room Record**. Not later than five Business Days after the date hereof, the Company shall deliver to Buyer a DVD ROM disc (or similar media) containing a digital copy of all of the materials included in the Data Room.

7.7. **Employee Matters**.

7.7.1. Prior to the Closing, Buyer or its Affiliates will provide a letter (a "**Offer Letter**") to each Specified Employee setting forth the specific terms and conditions of his or her continued employment with the Surviving Corporation contingent upon and following the Closing.

7.7.2. Following the Closing, Buyer shall use commercially reasonable efforts to give each employee of the Company who continues in employment after the Closing (each a "**Continuing Employee**") full credit for prior service with the Company for purposes of (i) eligibility and vesting under any Buyer employee plans and (ii) determination of benefit levels under any Buyer employee plan or policy relating to vacation or severance, in each case for which the Continuing Employee is otherwise eligible and in which the Continuing Employee is offered participation, but not where such credit would result in a duplication of benefits or where credit was not provided under comparable plans of the Company or for purposes of any equity-based awards. In addition, Buyer shall use commercially reasonable efforts to waive, or cause to be waived, any limitations on benefits relating to pre-existing conditions to the same extent such limitations are waived under any comparable plan of the Company and recognize for purposes of annual deductible and out-of-pocket limits under its medical and dental plans, deductible and out-of-pocket expenses paid by Continuing Employees in the calendar year in which the Effective Time occurs.

7.7.3. If requested by Buyer at least ten days prior to the Closing, the Company shall terminate each Plan intended to qualify under Section 401(a) of the Code, such termination to be effective as of no later than one day prior to the Closing. Not later than five days prior to such termination, the Company shall provide Buyer for its review, comment and approval copies of any resolutions, filings or other written actions as may be required to effectuate such termination.

7.7.4. The provisions of this Section 7.7 are solely for the benefit of the parties to this Agreement, and no current or former employee, officer, director, manager or consultant, or any other individual associated therewith, shall be regarded for any purpose as a third-party beneficiary of this Section 7.7, nor is anything contained in this Section 7.7, express or implied, intended to confer upon any such individual any right, benefit or remedy of any nature whatsoever, including any right to employment or continued employment for any period of time by reason of this Agreement, or any right to a particular term or condition of employment.

7.7.5. Notwithstanding anything to the contrary contained in this Agreement, no provision of this Agreement is intended to, or does, (x) constitute the establishment of a Plan, or an amendment to any Plan, or (y) alter or limit the ability of Buyer, the Surviving Corporation, or any of their respective Affiliates to amend, modify, or terminate any employee benefit plan, agreement, arrangement, program or policy at any time assumed, established, sponsored or maintained by any of them.

ARTICLE 8
INDEMNIFICATION

8.1. **Survival of Representations and Warranties**. The representations and warranties and covenants that require performance prior to the Closing of the Parties contained in this Agreement shall survive the Closing until the Escrow Termination Date; *provided*, *however*, that (i) the Fundamental Representations shall survive the Closing until the [*] of the Closing Date, (ii) any covenants of the Parties related to Taxes contained in this Agreement (including those set forth in Sections 6.4) shall survive the Closing until the date that is [*] and (iii) the representations and warranties of the Company set forth in Section 4.14 (the "**Intellectual Property Representations**") shall survive the Closing until the [*] of the Closing Date. All of the other covenants and other agreements of the Parties contained in this Agreement shall survive until fully performed or fulfilled, except as otherwise provided in this Agreement *provided*, *however*, that any covenants and agreements of the Parties related to Taxes contained in this Agreement (including those set forth in Sections 6.4 and 8.2.8) shall survive the Closing until the date that is [*]. Any claim for indemnification made in writing by the Indemnified Party on or prior to the expiration of the applicable survival period shall survive until such claim is finally and fully resolved.

8.2. **Indemnification of Buyer**. Subject to the limitations set forth in this ARTICLE 8, from and after the Closing, Buyer and its Affiliates (including, from and after the Closing, the Surviving Corporation) and each of their respective officers, directors, employees, shareholders, partners, members or other equity holders, agents and Representatives (each, a "**Buyer Indemnified Party**") shall be indemnified and held harmless by the Company Holders, severally (according to such Company Holder's Aggregate Payment Pro Rata Percentage) but not jointly, against any and all Losses, whether or not involving an Action instituted or asserted by a third party (each, a "**Third Party Claim**"), arising out of or directly or indirectly resulting from:

8.2.1. the breach or violation of or inaccuracy in any representation or warranty made by the Company contained in this Agreement or in any certificate delivered by the Company pursuant to this Agreement (in each case, as such representation or warranty would read if all qualifications as to materiality, including each reference to the words "Material Adverse Change", "material" and "materiality" and all similar phrases and words, were deleted therefrom other than in Section 4.9(b));

8.2.2. the breach or violation of any covenant or agreement of the Company or the Shareholders' Representative contained in this Agreement or in any certificate delivered by the Company or the Shareholders' Representative pursuant to this Agreement, whether occurring before or at the Closing but not after the Closing (other than any breach or violation described in Section 8.2.8(C));

8.2.3. any Fraud by the Company;

8.2.4. (i) any breach or violation of any covenant or agreement of any Company Holder (including under this ARTICLE 8) in or pursuant to this Agreement or any related document, certificate or instrument, including any Letter of Transmittal, Option Cancellation Agreement or Written Consent; or (ii) any failure of any Company Holder to have good and valid title to the shares of Company Capital Stock issued in the name of such Company Holder, free and clear of all Liens (the claims described in subsections (i) and (ii) of this Section 8.2.4 being hereafter collectively referred to as "**Company Holder Indemnity Events**" or each as a "**Company Holder Indemnity Event**");

8.2.5. any Action by a Company Shareholder or former shareholder of the Company, or by any other Person, seeking to assert, or based upon: (i) ownership or rights to ownership of any shares of stock of the Company; (ii) any right of a shareholder of the Company (other than the right to receive the Merger Consideration pursuant to this Agreement), including any option, preemptive right or right to notice or to vote; (iii) any right under the Certificate of Incorporation or By-laws of the Company; or (iv) any claim that his, her or its shares were wrongfully repurchased by the Company;

8.2.6. any Actions or disputes with respect to (i) the allocation or payment among Company Holders of the Merger Consideration or Option Merger Consideration pursuant to the terms of this Agreement; (ii) any claim that Schedule I or any schedule described in Sections 2.3.1(b), 2.3.1(c) or 2.3.1(d) is not true, complete and correct in all respects; or (iii) any other claims by any Company Holder or former Company Holder, in its capacity as such, against the Company or its directors, officers, or agents;

8.2.7. reliance on the authority of the Shareholders' Representative as the agent, representative and attorney-in-fact of Company Holders pursuant to Sections 2.11.5;

8.2.8. (A) any Taxes of the Company for all Pre-Closing Tax Periods (including the pre-Closing portion of Straddle Tax Periods), (B) any and all Taxes of any Person imposed on the Company, Surviving Corporation or any Affiliate (i) as a result of the Company being a member of an affiliated, consolidated, combined or unitary group prior to the Closing Date, (ii) as a transferee or successor by reason of a transaction occurring before the Closing, (iii) by Contract entered into before the Closing (other than with respect to Contracts that are not primarily related to Taxes entered into in the ordinary course of business) or (iv) otherwise (so long as such Tax described in this clause (iv) is related to the operations of the Company on or prior to the Closing Date or an event or transaction occurring before the Closing) and (C) any violation of a covenant or agreement of the Parties related to Taxes contained in this Agreement;

8.2.9. any amount paid by Buyer, the Company or the Surviving Corporation to any Company Shareholder with respect to appraisal rights under the DGCL or Dissenting Shares in excess of the value that such Person would have received in the

Merger for such Dissenting Shares had such shares been converted pursuant to Section 2.7, and all interest, costs, expenses and fees (including attorneys' fees) incurred by Buyer, the Company or the Surviving Corporation in connection with the exercise or attempted exercise of any dissenter's rights;

8.2.10. any amount required to repay Deal Fees, Change of Control Payments or the Debt Payoff Amount outstanding immediately prior to the Effective Time if and to the extent not deducted from the calculation of the Closing Payment at Closing; and

8.2.11. any amount required to repay Contingent Payment Deal Fees to the extent not deducted from the calculation of the Contingent Payment.

8.3. **Indemnification of Company Holders**. Subject to the limitations set forth in this ARTICLE 8, from and after the Closing, each of the Company Holders and each of their respective officers, directors, employees, shareholders, partners, members or other equity holders, agents and Representatives (each, a "**Company Holder Indemnified Party**") shall be indemnified and held harmless by Buyer against any and all Losses, whether or not involving a Third Party Claim, arising out of or directly or indirectly resulting from:

8.3.1. the breach or violation of or inaccuracy in any representation or warranty made by Buyer contained in this Agreement (in each case, as such representation or warranty would read if all qualifications as to materiality, including each reference to the words "Material Adverse Change," "material" and "materiality" and all similar phrases and words, were deleted therefrom);

8.3.2. any Fraud by Buyer; or

8.3.3. the breach or violation of any covenant or agreement of Buyer contained in this Agreement or covenant of the Company that contemplates performance at or after the Closing.

8.4. **Limits on Indemnification**.

8.4.1. Notwithstanding anything to the contrary contained in this Agreement, neither the Company Holder Indemnified Parties nor Buyer Indemnified Parties shall be liable for any claim for indemnification pursuant to Sections 8.2.1, or 8.3.1, as applicable, unless and until the aggregate amount of indemnifiable Losses which may be recovered from such Indemnifying Party under Sections 8.2.1 or 8.3.1, as the case may be, equals or exceeds [*] (such amount, the "**Basket**"), after which the Indemnifying Party shall be liable for Losses in excess of the Basket; *provided*, *however*, that the Basket shall not apply to breaches of, or inaccuracies in, (A) the Fundamental Representations or (B) any representations or warranties due to Fraud. Claims for indemnification pursuant to any other provision of Sections 8.2 or 8.3 are not subject to the monetary limitations set forth in this Section 8.4.1; *provided*, *however*, that in no event shall the aggregate amount of any Losses for which indemnification is provided under Section 8.3 exceed the Purchase Price plus any Contingent Payment that becomes due and payable to the Company Holders. The amount of any Losses for which indemnification is provided under this ARTICLE 8 shall be net of any amounts actually recovered by the Indemnified Party under insurance policies or contractual indemnification or contribution provisions of other agreements covering such Losses (net of the out-of-pocket costs reasonably incurred for pursuing or obtaining such insurance proceeds, deductibles and any increased premium amounts attributable to such claim). An Indemnified Party shall take commercially reasonable steps required by Applicable Law to mitigate any Losses for which indemnification is provided under this ARTICLE 8 upon becoming aware of any event that gives rise thereto. If an Indemnified Party (or an Affiliate) receives any insurance payment in connection with any claim for Losses for which it has already received an indemnification payment from the Indemnifying Party, it shall pay to the Indemnifying Party, within 30 days of receiving such insurance payment, any amount that the Indemnifying Party would not have had to pay pursuant to this ARTICLE 8 had such insurance payment been made at the time of such indemnification payment solely to avoid duplicative recovery for the same Loss, but not in excess of any amount previously so paid by the Indemnifying Party to or on behalf of the Indemnified Party in respect of such matter. The amount of Losses recoverable by an Indemnified Party under this ARTICLE 8 with respect to an indemnity claim shall be reduced by the net reduction in cash Taxes payable or paid that is actually received (including by way of a refund) by an Indemnified Party or its Affiliates with respect to the taxable year of the occurrence of the Loss giving rise to the indemnification obligation as a result of the incurrence of the applicable Loss, determined on a "with and without" basis. In no event shall any Indemnifying Party be responsible or liable for any Losses or other amounts under this ARTICLE 8 that are punitive damages (except to the extent such punitive damages are awarded to a third party).

8.4.2. [*]. Without limiting the generality of the foregoing, in no event shall any Party, its successors or permitted assigns be entitled to claim or seek rescission of the transactions consummated by this Agreement.

8.4.3. In the case of Buyer's rights to indemnification for Material Claims, for as long as there are funds available in the Indemnification Escrow Fund to cover the Buyer Indemnified Parties' indemnifiable Losses, any and all Losses payable by the Company Holders as Indemnifying Parties to the Buyer Indemnified Parties with respect to a Material Claim will be paid in cash first out of the Indemnification Escrow Fund, and in the event such Losses in respect of Material Claims exceed, or are not paid and satisfied in full from, the Indemnification Escrow Fund, the Buyer Indemnified Parties shall have the right to satisfy in full such Losses by pursuing indemnification rights and recourse directly against the Company Holders in accordance with each Company Holder's Aggregate Payment Pro Rata Percentage of the Merger

Consideration and Option Merger Consideration up to the aggregate Merger Consideration and Option Merger Consideration actually paid, or that becomes due and payable in accordance with Section 2.14, to each Company Holder.

8.4.4. Notwithstanding anything to the contrary in this Agreement or otherwise, in no event shall a Company Holder be liable under this Agreement or otherwise in connection with the transactions contemplated hereby or in connection therewith for any Losses in excess of the Merger Consideration and Option Merger Consideration actually paid, or that becomes due and payable in accordance with Section 2.14, to him, her or it.

8.4.5. In the case of Losses arising out of or resulting from Company Holder Indemnity Events, the liability of each Company Holder for Company Holder Indemnity Events shall be solely with respect to Company Holder Indemnity Events committed by such Company Holder (the "**Indemnifying Company Holder**") and not with respect to Company Holder Indemnity Events committed by any other Company Holder, and any Losses arising out of or based upon a Company Holder Indemnity Event that is satisfied from the Indemnification Escrow Fund or Buyer's right of set-off against Contingent Payments under Section 8.8, as appropriate, shall reduce the Indemnifying Company Holder's entitlement to the Indemnification Escrow Fund or Contingent Payments, as appropriate, and not any other Company Holder's entitlement to the Indemnification Escrow Fund or Contingent Payments, as appropriate; *provided*, *however*, the Buyer Indemnified Parties shall have the right, but not the obligation, to satisfy all or a portion of the Losses arising out of or relating to a Company Holder Indemnity Event by pursuing indemnification rights and recourse directly against the Company Holder that committed the Company Holder Indemnity Event without having to first resort to obtaining payment from such Indemnifying Company Holder's portion of the Indemnification Escrow Fund or exercising Buyer's rights of set-off under Section 8.8 against such Indemnifying Company Holder's portion of Contingent Payments.

8.4.6. The right of Buyer to indemnification pursuant to Section 8.2 will not be affected by any investigation conducted or knowledge acquired (or capable of being acquired) at any time, whether before or after the execution and delivery of this Agreement or the Closing, with respect to any accuracy of any representation or warranty, or performance of or compliance with any covenant or agreement herein.

8.4.7. For purposes of this Agreement, "**Material Claims**" means [*].

8.4.8. No Company Holder shall be liable to any other Person for any Losses pursuant to this ARTICLE 8 that arise out of or relate to a breach of or inaccuracy of any representation, warranty, covenant or agreement set forth in this Agreement (and the amount of any Losses incurred in respect of such breach or inaccuracy shall not be included in the calculation of any limitations on indemnification set forth herein) to the extent the Loss is actually deducted from the Closing Payment or actually included in the determination of the Final Closing Working Capital Adjustment Amount.

8.4.9. [*].

8.5. **Notice of Loss; Third Party Claims**.

8.5.1. A claim for indemnification for any matter not involving a Third Party Claim may be asserted by written notice to the party from whom indemnification is sought. Such notice shall include the facts constituting the basis for such claim for indemnification and the sections of this Agreement upon which such claim for indemnification is then based.

8.5.2. Each Indemnified Party will notify the Indemnifying Party in writing if it becomes aware of a claim for which the Indemnified Party may seek indemnification hereunder. If any Action is instituted against a Party with respect to which indemnity may be sought pursuant to Sections 8.2 or 8.3, as applicable, the Indemnified Party will give prompt written notice of the indemnity claim to the Indemnifying Party and provide the Indemnifying Party with a copy of any complaint, summons or other written notice that the Indemnified Party receives in connection with any such Action. An Indemnified Party's failure to deliver such written notice will relieve the Indemnifying Party of liability to the Indemnified Party under Sections 8.2 or 8.3, as applicable, only to the extent such delay materially prejudices the Indemnifying Party's ability to defend such claim. The Indemnified Party will permit the Indemnifying Party to participate in such Action and assume the defense and disposition thereof by negotiated settlement or otherwise (subject to this Section 8.5) with counsel reasonably satisfactory to the Indemnified Party; *provided*, *however*, that the Indemnifying Party will not have the right to assume the defense of any Action if (a) the Indemnified Party will have one or more legal or equitable defenses available to it which are different from or in addition to those available to the Indemnifying Party, and, in the reasonable opinion of the Indemnified Party, counsel for the Indemnifying Party would not adequately represent the interests of the Indemnified Party because such interests would be in conflict with those of the Indemnifying Party or (b) the Indemnifying Party has not assumed the defense of the Action in a timely fashion (but in any event within 30 days after receiving notice of such Action). If the Indemnifying Party assumes the defense of any Action, the Indemnified Party will be entitled to participate in any Action at its expense. The assumption of the defense by the Indemnifying Party will not be construed as an acknowledgment that the Indemnifying Party is liable to indemnify the Indemnified Party with respect to such Action, nor will it constitute a waiver by the Indemnifying Party of any defenses it may assert against the Indemnified Party's claim for indemnification. The Indemnifying Party will act reasonably and in good faith with respect to all matters relating to such claim and will not settle or otherwise resolve such claim without the Indemnified Party's prior written consent, which will not be unreasonably withheld, conditioned or delayed. The Indemnified Party will cooperate with the Indemnifying Party in the Indemnifying Party's defense of any claim for which indemnity is sought under this Agreement, at the Indemnifying Party's cost and expense. If it is ultimately determined that the Indemnifying Party is not obligated to indemnify the Indemnified Party from and against

such claim, the Indemnified Party will reimburse the Indemnifying Party for any Liability incurred by the Indemnifying Party in its defense of such claim.

8.5.3. Notwithstanding the foregoing, Third Party Claims with respect to Taxes that involve a Taxing Authority shall be governed by Section 6.4.7, and not the preceding Sections 8.5.1 or 8.5.2.

8.6. **Tax Treatment**. To the extent permitted by Tax Law, the Parties agree to treat all payments made under this ARTICLE 8 as adjustments to the Merger Consideration and Option Merger Consideration for all Tax purposes (other than payments to Designated Individuals).

8.7. **Remedies**. From and after the Closing, except as specifically provided herein under Section 2.13, the sole and exclusive remedy of any Indemnified Party for any and all claims arising out of or relating to this Agreement or any other document, certificate or agreement delivered pursuant hereto or the transactions contemplated herein or therein shall be indemnification in accordance with this ARTICLE 8. Notwithstanding the foregoing, this Section 8.7 shall not operate to limit the rights of the Parties to seek equitable remedies (including specific performance or injunctive relief) or any remedies available to it under Applicable Law in the event of (i) Fraud by the Company or the Buyer, in each case solely against the persons who committed such Fraud, (ii) a Party's failure to comply with its indemnification obligations hereunder and (iii) a Party's breach or violation of any covenant in this Agreement that is to be performed in whole or in part after the Closing.

8.8. **Set-Off**. In addition to all other remedies contemplated herein, Buyer may set off, deduct or retain any amount due to Buyer in respect of any claim for indemnification against any of the Company Holders pursuant to this Agreement against any payments which Buyer may be obliged to make (or procure to be made) to the Company Holders pursuant to this Agreement, including any obligation of Buyer to pay any Contingent Payment; [*].

8.9. **No Right of Contribution**. No Company Holder shall have any right of contribution against the Company or the Surviving Corporation with respect to any breach by the Company of any of its representations, warranties, covenants or agreements.

8.10. **No Circular Recovery**. Each Company Holder hereby agrees that it will not make any claim for indemnification against Buyer, the Surviving Corporation or the Company by reason of the fact that such Company Holder was a controlling Person, director, employee or Representative of the Company or the Surviving Corporation or was serving as such for another Person at the request of Buyer or the Company (whether such claim is for Losses of any kind or otherwise and whether such claim is pursuant to any statute, organizational document, contractual obligation or otherwise) with respect to any claim brought by an Indemnified Party against any Company Holder relating to this Agreement or any of the transactions contemplated hereby. With respect to any claim brought by an Indemnified Party against any Company Holder relating to this Agreement and any of the transactions contemplated hereby, each Company Holder expressly waives any right of subrogation, contribution, advancement, indemnification or other claim against the Company with respect to any amounts owed by such Company Holder pursuant to this ARTICLE 8.

8.11. **Release of Indemnification Escrow Fund**. Subject to Section 2.15.2, in accordance with the terms and conditions of the Escrow Agreement, on the Escrow Termination Date, any amounts remaining in the Indemnification Escrow Fund, minus any portion of the Indemnification Escrow Fund subject to pending claims for indemnification pursuant to this ARTICLE 8 (including any accrued or estimated fees and expenses associated with such claim), shall be released from the Indemnification Escrow Fund for disbursement to the Company Holders or to the Surviving Corporation for amounts to be paid through payroll (subject to applicable withholding), or for retention by the Surviving Corporation with respect to an amount equal to any applicable Escrow Release Tax Costs. On the Business Day immediately following the Escrow Termination Date, the Paying Agent and Surviving Corporation shall (and shall be instructed by the Shareholders' Representative and the Buyer to) pay such released amount (subject to applicable withholding and less any applicable Escrow Release Tax Costs) to the Company Holders in accordance with this Agreement and Schedule I. Subject to Section 2.15.2, any remaining portion of the Indemnification Escrow Fund, after payment and satisfaction of any and all pending claims for indemnification pursuant to this ARTICLE 8, shall be released from the Indemnification Escrow Fund for disbursement to the Company Holders or to the Surviving Corporation for amounts to be paid through payroll (subject to applicable withholding), or for retention by the Surviving Corporation with respect to an amount equal to any applicable Escrow Release Tax Costs, promptly following resolution of such pending claims.

ARTICLE 9
TERMINATION

9.1. **Termination**.

9.1.1. This Agreement may be terminated, and the Merger contemplated hereby may be abandoned, at any time prior to the Closing:

(a) by Buyer by written notice to the Company if the Shareholder Approval has not been delivered to Buyer by [*];

(b) by mutual consent of Buyer, on the one hand, and the Company, on the other hand;

(c) by Buyer, if there has been a breach by the Company of any covenant, agreement, representation or warranty contained in this Agreement which has prevented the satisfaction of any condition to the obligations of Buyer pursuant to Sections 3.1 and 3.2 at the Closing and such breach has not been waived by Buyer, or cured by the

Company within [*] after written notice thereof from Buyer; *provided* that Buyer will not have the right to terminate this Agreement pursuant to this Section 9.1.1(c) if Buyer is then in material violation or breach of any of its covenants, obligations, representations or warranties set forth in this Agreement;

(d) by the Company, if there has been a breach by Buyer of any covenant, agreement, representation or warranty contained in this Agreement which has prevented the satisfaction of any condition to the obligations of the Company pursuant to Sections 3.1 and 3.3 at the Closing and such breach has not been waived by the Company, or cured by Buyer within [*] after written notice thereof by the Company; *provided* that the Company will not have the right to terminate this Agreement pursuant to this Section 9.1.1(d) if the Company is then in material violation or breach of any of its covenants, obligations, representations or warranties set forth in this Agreement; or

(e) by either Buyer or the Company if the Closing Date does not occur by [*] (the "**Outside Date**") (*provided, however*, that (i) Buyer will not have the right to terminate this Agreement pursuant to this Section 9.1.1(e) if Buyer is then in material violation or breach of any of its covenants, obligations, representations or warranties set forth in this Agreement, (ii) the Company will not have the right to terminate this Agreement pursuant to this Section 9.1.1(e) if the Company is then in material violation or breach of any of its covenants, obligations, representations or warranties set forth in this Agreement); and (iii) the right to terminate this Agreement under this Section 9.1.1(e) shall not be available to a Party if the failure of the Merger to have been consummated on or before the Outside Date was primarily due to the failure of such Party to perform any of its material obligations under this Agreement.

9.2. **Effect of Termination**. If this Agreement is terminated and the Merger and the other transactions contemplated hereby are abandoned as described in this ARTICLE 9, this Agreement shall become void and of no further force or effect, except for the provisions of Sections 2.11.3 (Shareholders' Representative Indemnification), 6.10 (Confidentiality), 7.2 (Publicity), 7.4 (Expenses), this 9.2 (Effect of Termination), and ARTICLE 10 (Miscellaneous) (in each case including the respective meanings ascribed to the related capitalized terms in Article I (Definitions)); *provided* that nothing in this Section 9.2 shall be deemed to (a) release any Party from any liability for any breach by such Party of the terms and provisions of this Agreement or to impair the right of any Party to compel specific performance by the other Party of its respective obligations under this Agreement, and (b) nothing in this ARTICLE 9 shall limit the liability of any Party hereto for Fraud or Willful Breach, in each case, including, in the case of damages sought by the Company, damages based on the consideration payable to the Company Holders pursuant to this Agreement. For purposes of clause (b) in the foregoing sentence, Willful Breach shall mean "the breach of a covenant or obligation under this Agreement where: (w) such covenant or obligation is material to the ability of the breaching Party to timely consummate the transactions contemplated by this Agreement or otherwise perform its obligations under this Agreement; (x) the breach Party shall have materially and willfully breached such covenant or obligation; (y) the breach of such covenant or obligation shall not have been cured in all material respects; and (z) and executive officer of the breaching Party had actual knowledge, at the time of such breach of such covenant or obligation, (i) that the breaching Party was breaching such covenant or obligation and (ii) of the consequences of such breach under this Agreement." For the avoidance of doubt, Section 6.11 shall terminate upon the termination of this Agreement.

ARTICLE 10
MISCELLANEOUS

10.1. **Notices**. All notices that are required or permitted hereunder will be in writing and sufficient if delivered personally, sent by nationally-recognized overnight courier or sent by electronic mail, confirmation of receipt requested, addressed as follows:

If to Buyer or Merger Sub:

Vertex Pharmaceuticals Incorporated
Attn: Business Development
50 Northern Avenue
Boston, MA 02110
[*]

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

Vertex Pharmaceuticals Incorporated
Attn: Corporate Legal
50 Northern Avenue
Boston, MA 02110
[*]

and:

Ropes & Gray LLP
Attn: Marc Rubenstein
Zachary Blume
Prudential Tower
800 Boylston Street

Boston, MA 02199
[*]

If to the Company:

Exonics Therapeutics, Inc.
Attention: Chief Executive Officer
490 Arsenal Way, Suite 110
Watertown, MA 02472
[*]

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

Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, Massachusetts 02109
Attention: Gary R. Schall, Esq. and Joseph B. Conahan, Esq.
[*]

If to the Shareholders' Representative:

Shareholder Representative Services LLC
950 17th Street, Suite 1400
Denver, CO 80202
Attention: Managing Director
[*]

or to such other address as the Party to whom notice is to be given may have furnished to the other Parties in writing in accordance herewith. Any such notice will be deemed to have been given and received by the other Parties: (a) when delivered if personally delivered, (b) on receipt if sent by overnight courier, or (c) when confirmation of receipt is sent, if sent by electronic mail.

10.2. **Assignment**. Neither this Agreement nor any interest hereunder will be assignable by any Party without the prior written consent of the other Parties, except as follows: Buyer may, subject to Section 2.14 [*] (a) subject to the terms of this Agreement, assign its rights and obligations under this Agreement to a third party that acquires all or substantially all of the business or assets of Buyer (whether by merger, reorganization, acquisition, sale or otherwise) and agrees in writing to be bound by the terms of this Agreement; *provided* that such sale is not primarily for the benefit of its creditors and (b) assign its rights and obligations under this Agreement to any of its Affiliates, in whole or in part; and Merger Sub may assign its rights and obligations under this Agreement to Buyer or to any of Buyer's Affiliates; *provided* that Buyer and Merger Sub, as applicable, will remain primarily liable for all of its rights and obligations under this Agreement. Each Party will promptly notify the other Parties of any assignment or transfer under the provisions of this Section 10.2. This Agreement will be binding upon the successors and permitted assigns of the Parties and the name of a Party appearing herein will be deemed to include the names of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Agreement. Any assignment not in accordance with this Section 10.2 will be void.

10.3. **Consents and Approvals**. For any matter under this Agreement requiring the consent or approval of any Party, to be valid and binding on the Parties, such consent or approval must be in writing.

10.4. **Governing Law**. This Agreement, and all claims arising under or in connection therewith, will be governed by and interpreted in accordance with the substantive laws of the State of Delaware, without regard to conflict of law principles thereof; provided, however, that any and all issues concerning any Patent, including validity, infringement or enforceability of any Patent shall be resolved in accordance with the laws of the jurisdiction which granted such Patent(s).

10.5. **Consent to Jurisdiction; Enforcement**. Each of the Parties irrevocably (a) consents to the exclusive jurisdiction of the Chancery Court of the State of Delaware (or the United States District Court for the District of Delaware) for the purpose of any disputes, suits, actions or proceedings of any nature arising under, relating to, or in connection with this Agreement ("Disputes") or the negotiation, execution or performance hereof; (b) agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such court; (c) agrees that service of process may be made in the manner provided for in Section 10.1 or such other manner as may be provided under Applicable Law; and (d) agrees that, except as set forth below, it will not bring any Dispute relating to this Agreement in any court other than the Chancery Court of the State of Delaware or the United States District Court for the District of Delaware. Each of the parties hereby irrevocably waives, and agrees not to assert, by way of motion, as a defense, counterclaim or otherwise, in any Dispute with respect to this Agreement, (x) any claim that it is not personally subject to the jurisdiction of the above-named courts for any reason other than the failure to serve in accordance with this Section 10.5, (y) any claim that it or its property is exempt or immune from jurisdiction of any such court or from any legal process commenced in such courts (whether through service of notice, attachment prior to judgment, attachment in aid of execution of judgment, execution of judgment or otherwise); and (z) to the fullest extent permitted by Applicable Law, any claim that (A) the Dispute in such court is brought in an inconvenient forum; (B) the venue of such Dispute is improper; or (C) this Agreement, or the subject matter of this

Agreement, may not be enforced in or by such courts. THE PARTIES EXPRESSLY WAIVE AND FOREGO ANY RIGHT TO TRIAL BY JURY. This Section 10.5 shall not apply to any dispute under Section 2.13 that is required to be decided by the Auditor. Each Party hereby waives any defenses in any action for specific performance that a remedy at law would be adequate. During the pendency of any dispute resolution proceeding between the Parties under this Section 10.5, the obligation to make any payment under this Agreement from one Party to the other Party, which payment is the subject, in whole or in part, of a proceeding under this Section 10.5, shall be tolled until the final outcome of such dispute has been established.

10.6. **Waiver**. No provision of this Agreement will be waived by any act, omission or knowledge of a Party or its agents or employees except by an instrument in writing expressly waiving such provision and signed by a duly authorized officer of the waiving Party. The waiver by any of the Parties of any breach of any provision hereof by any other Party will not be construed to be a waiver of any succeeding breach of such provision or a waiver of the provision itself. Except as expressly set forth in ARTICLE 8, the remedies provided for herein are cumulative and are not exclusive of any remedies that may be available to any Party at Applicable Law, in equity or otherwise.

10.7. **Amendment**. Except as otherwise specifically set forth in this Agreement, this Agreement may be amended by the Parties at any time, whether before or after the Shareholder Approval has been obtained; *provided*, *however*, that, after the Shareholder Approval has been obtained, there shall be made no amendment that by Applicable Law requires further approval by shareholders of either Party, without the further approval of such shareholders. No amendment, modification or supplement of any provision of this Agreement will be valid or effective unless made in writing and signed by a duly authorized officer of each Party. To the extent permitted by Applicable Law, Buyer and the Shareholders' Representative may cause this Agreement to be amended at any time after the Closing by execution of an instrument in writing signed on behalf of Buyer and the Shareholders' Representative.

10.8. **Entire Agreement**. This Agreement, together with the Disclosure Schedule and exhibits and all ancillary agreements, documents or instruments to be delivered in connection herewith and therewith, constitute and contain the complete, final and exclusive understanding and agreement of the Parties and cancels and supersedes any and all prior negotiations, correspondence, understandings and agreements, whether oral or written, among the Parties respecting the subject matter hereof and thereof, including that certain Mutual Confidentiality Agreement, dated as of December 6, 2018, by and between Company and Buyer, as amended, which is hereby superseded and replaced in its entirety as of the date hereof, and any Confidential Information disclosed by a Party under such agreement will be treated in accordance with the provisions of this Agreement.

10.9. **No Third-Party Rights or Obligations**. No provision of this Agreement will be deemed or construed in any way to result in the creation of any rights or obligations in any Person not a Party to this Agreement (except that ARTICLE 8 is intended to benefit the Buyer Indemnified Parties and the Company Holder Indemnified Parties). No covenant or other undertaking in this Agreement shall constitute the establishment or termination of, or an amendment to any Plan, or any other plan, program, policy or arrangement, and any covenant or undertaking that suggests that a Plan will be amended, shall be effective only upon the adoption of a written amendment in accordance with the amendment procedures of such Plan. Nothing in this Section 10.9 shall be construed to impair the rights and powers of the Shareholders' Representative to take or refrain from taking any action for and on behalf of the Company Holders to enforce the rights of the Company Holders under this Agreement as provided in Section 2.11.

10.10. **Counterparts**. This Agreement may be executed in any number of counterparts, each of which will be an original and all of which, taken together, will constitute the same document. Counterparts may be signed and delivered by facsimile or digital transmission (*e.g.*, .pdf), each of which will be binding when received by the applicable Party.

10.11. **Severability**. If any clause or portion thereof in this Agreement is for any reason held to be invalid, illegal or unenforceable, the same will not affect any other portion of this Agreement, as it is the intent of the Parties that this Agreement will be construed in such fashion as to maintain its existence, validity and enforceability to the greatest extent possible. In any such event, this Agreement will be construed as if such clause of portion thereof had never been contained in this Agreement, and there will be deemed substituted therefor such provision as will most nearly carry out the intent of the Parties as expressed in this Agreement to the fullest extent permitted by Applicable Law.

10.12. **English Language**. This Agreement shall be written and executed in, and all other communications under or in connection with this Agreement shall be in, the English language. Any translation into any other language shall not be an official version thereof, and in the event of any conflict in interpretation between the English version and such translation, the English version shall control.

10.13. **Representation by Legal Counsel**. Each Party hereto represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption will exist or be implied against the Party that drafted such terms and provisions.

10.14. **Waiver of Conflicts Regarding Representation**. As of the Effective Time, Buyer hereby waives and agrees not to assert, and Buyer agrees to cause the Surviving Corporation and each of future subsidiaries to waive and not to assert, any conflict of interest arising out of or relating to any representation after the Closing (any "**Post-Closing Representation**") of the Shareholders' Representative, any Company Holders, any of their respective Affiliates or any officer, employee or director of

the Shareholders' Representative, any Company Holders or the Company (any such Person, a "**Designated Person**") in any matter involving this Agreement or any agreement, certificate, instrument or other document executed or delivered pursuant to this Agreement or any transaction contemplated hereby or thereby (including any litigation, arbitration, mediation or other proceeding and including any matter regarding the negotiation, execution, performance or enforceability hereof or thereof) by Wilmer Cutler Pickering Hale and Dorr LLP in respect of Wilmer Cutler Pickering Hale and Dorr LLP's representation of the Company prior to the Closing in connection with this Agreement (the "**Current Representation**").

[*] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM IF PUBLICLY DISCLOSED.

10.15. **Non-Assertion of Attorney Client Privilege**. As of the Effective Time, Buyer hereby agrees not to control or assert, and Buyer agrees to cause the Surviving Corporation and each of its future subsidiaries not to control or assert, any attorney-client privilege, work product protection or other similar privilege or protection applicable to any communication between Wilmer Cutler Pickering Hale and Dorr LLP and any Designated Person during the Current Representation in connection with any Post-Closing Representation, including in connection with a dispute with Buyer, the Surviving Corporation or any of their respective Affiliates (including, after the Closing, the Company and each of its future subsidiaries), it being the intention of the parties hereto that, notwithstanding anything to the contrary in this Agreement or Section 259 of the DGCL, all rights of any Person under or with respect to such attorney-client privilege, work product protection or other similar privilege or protection, including the right to waive, assert and otherwise control such attorney-client privilege, work product protection or other similar privilege or protection, shall be (and are hereby) transferred to or retained by (as applicable), and vested solely in, such Designated Person. Notwithstanding the foregoing, in the event that a dispute arises after the Closing between Buyer, the Surviving Corporation or any of its Subsidiaries, or any of their Affiliates, and a Person not a party to this Agreement, the Surviving Corporation may assert the attorney-client privilege to prevent disclosure of confidential communications to such third party.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their duly authorized representatives as of the date first written above.

VERTEX PHARMACEUTICALS INCORPORATED

By: Jeffrey LeidenName: Jeffrey Leiden
Title: Chairman, President and Chief Executive Officer

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IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their duly authorized representatives as of the date first written above.

VXP MERGER SUB, INC.

By: Jeffrey LeidenName: Jeffrey Leiden
Title: President

[Signature Page to Agreement and Plan of Merger]

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IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their duly authorized representatives as of the date first written above.

EXONICS THERAPEUTICS, INC.

By: John Ripple

Name: John Ripple

Title: Chief Executive Officer

[Signature Page to Agreement and Plan of Merger]

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IN WITNESS WHEREOF, the Parties have caused this Agreement to be signed by their duly authorized representatives as of the date first written above.

SHAREHOLDER REPRESENTATIVE SERVICES LLC, **SOLELY IN ITS CAPACITY AS SHAREHOLDERS' REPRESENTATIVE**

By: Sam Riffe
Name: Sam Riffe
Title: Managing Director

[Signature Page to Agreement and Plan of Merger]

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Exhibit A

Working Capital Exhibit

[See attached]

[*]

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Exhibit B

Written Consent

[See attached]

[*]

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Exhibit C

Charter Amendment

[See attached]

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CERTIFICATE OF AMENDMENT
TO THE
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
EXONICS THERAPEUTICS, INC.

The undersigned, John Ripple, hereby certifies that:

1. He is the Chief Executive Officer of Exonics Therapeutics, Inc., a Delaware corporation (this "**Corporation**").

2. The Certificate of Incorporation of this Corporation was originally filed with the Delaware Secretary of State on November 30, 2016. An Amended and Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on November 7, 2017.

3. Pursuant to Section 245 of the General Corporation Law of the State of Delaware, this Certificate of Amendment to the Amended and Restated Certificate of Incorporation hereby amends Section 3 of Article V, of this Corporation's Amended and Restated Certificate of Incorporation by adding the following paragraph as a new paragraph (f):

"(f) Notwithstanding anything to the contrary in this Section 3, in the event the Corporation consummates a Deemed Liquidation Event prior to [___], 2019 (the "**Outside Date**") pursuant to that certain Agreement and Plan of Merger (the "**Labrador Merger Agreement**"), dated [___], 2019, by and between the Corporation, Vertex Pharmaceuticals Incorporated, a company incorporated under the laws of Massachusetts ("**Buyer**"), VXP Merger Sub, Inc., a Delaware corporation, and Shareholder Representative Services LLC, the consideration payable to the holders of shares of Series A Preferred Stock and Common Stock pursuant to such Deemed Liquidation Event shall be paid, and the allocation of any consideration subject to a deferral, shall be allocated, in accordance with such Labrador Merger Agreement, and the terms of such Labrador Merger Agreement shall prevail over the terms set forth in Article V, Section 2 and Section 3, paragraphs (a)–(e) and the provisions of this Article V, Section 3, paragraph (f) shall control and govern with respect to the distribution of consideration payable pursuant to such Labrador Merger Agreement, and the holders of shares of Series A Preferred Stock and Common Stock shall not have the rights to distributions in connection with such Deemed Liquidation Event under Article V, Section 2 and Section 3, paragraphs (a)–(e) above. Notwithstanding the foregoing, if the Deemed Liquidation pursuant to the Labrador Merger Agreement is not consummated prior to the Outside Date, then the holders of shares of Preferred Stock and Common Stock shall thereafter have the rights to distributions and payments pursuant to a Deemed Liquidation Event as set forth under Article V, Section 2 and Section 3, paragraphs (a)–(e) above in lieu of the rights set forth in the first sentence of this Article V, Section 3, paragraph (f).

4. The foregoing Certificate of Amendment to Amended and Restated Certificate of Incorporation has been duly adopted by this Corporation's Board of Directors and stockholders in accordance with the applicable provisions of Sections 141, 228 and 242 of the Delaware General Corporation Law.

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IN WITNESS WHEREOF, the undersigned officer of this Corporation does hereby declare and certify, under penalties of perjury, that this is the act and deed of the corporation and the facts stated herein are true, and accordingly has hereunto signed this Certificate of Amendment this ____ day of ____, 2019.

John Ripple

Chief Executive Officer

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Exhibit D

Certificate of Merger

[See attached]

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CERTIFICATE OF MERGER
OF
VXP MERGER SUB, INC.
INTO
EXONICS THERAPEUTICS, INC.

Pursuant to Section 251 of the General
Corporation Law of the State of Delaware

Exonics Therapeutics, Inc., a Delaware corporation, does hereby certify:

FIRST: The names and states of incorporation of the constituent corporations to this merger are as follows:

VXP Merger Sub, Inc.	Delaware
Exonics Therapeutics, Inc.	Delaware

SECOND: An agreement of merger has been approved, adopted, executed and acknowledged by each of the constituent corporations in accordance with Section 251 of the General Corporation Law of the State of Delaware (the "DGCL").

THIRD: The name of the corporation surviving the merger is "Exonics Therapeutics, Inc." (the "Surviving Corporation").

FOURTH: The Amended and Restated Certificate of Incorporation of the Surviving Corporation shall be amended and restated to read in its entirety as set forth in Exhibit A attached hereto and shall continue as the amended and restated certificate of incorporation of the Surviving Corporation until further amended in accordance with the provisions of the DGCL.

FIFTH: The merger shall be effective upon filing of this Certificate of Merger with the Secretary of State of the State of Delaware in accordance with Sections 103 and 251 of the DGCL.

SIXTH: The executed agreement of merger is on file at an office of the Surviving Corporation at: 490 Arsenal Way, Suite 110, Watertown, MA 02472. A copy will be provided, upon request and without cost, to any stockholder of either constituent corporation.

[*Signature Page Follows*]

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IN WITNESS WHEREOF, Exonics Therapeutics, Inc. has caused this Certificate of Merger to be executed in its corporate name this [_] day of [_].

EXONICS THERAPEUTICS, INC.

By: __

Name: [pre-Closing Company Officer]

Title:

[Signature Page to Certificate of Merger]

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EXHIBIT A
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION

[Attached]

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STATE *of* DELAWARE

AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

EXONICS THERAPEUTICS, INC.

1. The name of this corporation is Exonics Therapeutics, Inc. (the "Corporation").

2. The registered office of this corporation in the State of Delaware is located at Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.

3. The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL of the State of Delaware (the "DGCL").

4. The total number of shares of stock that the Corporation shall have authority to issue is one thousand (1,000) shares of Common Stock, $0.0001 par value per share. Each share of Common Stock shall be entitled to one vote.

5. Except as otherwise provided in the provisions establishing a class of stock, the number of authorized shares of any class or series of stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the corporation entitled to vote irrespective of the provisions of Section 242(b)(2) of the DGCL.

6. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. The size of the Board of Directors shall be determined as set forth in the bylaws of the Corporation, as in effect from time to time (the "Bylaws"). The election of directors need not be by written ballot unless the Bylaws shall so require.

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7. In furtherance and not in limitation of the power conferred upon the Board of Directors by law, the Board of Directors shall have power to make, adopt, alter, amend and repeal from time to time the Bylaws of the Corporation, subject to the right of the stockholders entitled to vote with respect thereto to alter and repeal Bylaws made by the Board of Directors.

8. To the fullest extent permitted by the DGCL as the same exists or as may hereafter be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended. The Corporation shall have the power to indemnify, to the fullest extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") by reason of the fact that such person is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding. Neither any amendment nor repeal of this Section 8, nor the adoption of any provision of this Corporation's Certificate of Incorporation inconsistent with this Section 8, shall eliminate or reduce the effect of this Section 8, in respect of any matter occurring, or any action or proceeding accruing or arising or that, but for this Section 8, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

9. The books of the Corporation may (subject to any statutory requirements) be kept outside the State of Delaware as may be designated by the Board of Directors or in the Bylaws of the Corporation.

10. If at any time the Corporation shall have a class of stock registered pursuant to the provisions of the Securities Exchange Act of 1934, for so long as such class is so registered, any action by the stockholders of such class must be taken at an annual or special meeting of stockholders and may not be taken by written consent.

11. The Corporation hereby elects not be governed by Section 203 of the DGCL.

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Exhibit E

Company Compliance Certificate

[See attached]

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EXONICS THERAPEUTICS, INC.

COMPLIANCE CERTIFICATE

[___], 2019

The undersigned, John Ripple, in his capacity as the Chief Executive Officer of Exonics Therapeutics, Inc., a Delaware corporation (the "Company"), and Jesper Gromada, in his capacity as the Chief Scientific Officer of the Company, pursuant to Section 3.2.1 of that certain Agreement and Plan of Merger, dated as of [___], 2019, by and among the Company, Vertex Pharmaceuticals Incorporated, Shareholder Representative Services LLC and VXP Merger Sub, Inc. (the "Merger Agreement"), do hereby certify that they are the duly elected, qualified and acting Chief Executive Officer and Chief Scientific Officer, respectively, of the Company, and that they are authorized to execute this certificate on behalf of the Company. Capitalized terms used herein without definition shall have the respective meanings assigned to such terms in the Merger Agreement. The undersigned do hereby further certify that:

1. (A) The representations and warranties of the Company set forth in the Merger Agreement that are Fundamental Representations are true and correct in all respects, except for the representations set forth in Section 4.4.1 and the first two sentences of Section 4.4.2 of the Merger Agreement, which are true and correct in all respects, except to the extent of any *de minimis* inaccuracy, and (B) all other representations and warranties of the Company set forth in the Merger Agreement that are not Fundamental Representations are true and correct (without giving effect to any limitation as to "materiality" or "Material Adverse Change" or other similar materiality-based limitation set forth therein) in all respects, except where the failure of such representations and warranties to be true and correct would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Change, in each of cases (A) and (B), as of the date of the Merger Agreement and as of the date hereof with the same effect as though made as of the date hereof, except that the accuracy of representations and warranties that by terms speak as of a specified date will be determined as of such date in the manner set forth above.

2. The Company has complied in all material respects with all covenants, obligations and agreements contained in the Merger Agreement that are required to be performed or complied with by the Company on or before the date hereof.

[Signature Page Follows]

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IN WITNESS WHEREOF, the undersigned have caused this Compliance Certificate to be executed as of the date first written above.

EXONICS THERAPEUTICS, INC.

By:_____
John Ripple, Chief Executive Officer

By:_____
Jesper Gromada, Chief Scientific Officer

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Exhibit F

Buyer Compliance Certificate

[See attached]

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VERTEX PHARMACEUTICALS INCORPORATED

COMPLIANCE CERTIFICATE

[___], 2019

The undersigned, Jeffrey Leiden, in his capacity as the Chief Executive Officer of Vertex Pharmaceuticals Incorporated, a Massachusetts corporation ("Buyer"), pursuant to Section 3.3.1 of that certain Agreement and Plan of Merger, dated as of [___], 2019, by and among Buyer, VXP Merger Sub, Inc. ("Merger Sub"), Exonics Therapeutics, Inc. and Shareholder Representative Services LLC (the "Merger Agreement"), does hereby certify that he is the duly elected, qualified and acting Chief Executive Officer of Buyer, and that he is authorized to execute this certificate on behalf of Buyer. Capitalized terms used herein without definition shall have the respective meanings assigned to such terms in the Merger Agreement. The undersigned does hereby further certify that:

1. The representations and warranties of Buyer and Merger Sub set forth in the Merger Agreement are true and correct (without giving effect to any limitation as to "materiality" or "material adverse effect" or other similar materiality-based limitation set forth therein) in all respects, in each case as of the date of the Merger Agreement and as of the date hereof with same effect as though made as of the date hereof (other than representations and warranties that by terms speak as of a specified date, which will be determined as of such date), except for such failures to be true and correct that would not reasonably be expected to have, individually or in the aggregate, a material adverse effect on the ability of Buyer and Merger Sub to consummate the transactions contemplated by the Merger Agreement.

2. Buyer and Merger Sub have complied in all material respects with all covenants, obligations and agreements contained in the Merger Agreement that are required to be performed or complied with by Buyer and Merger Sub on or before the date hereof.

[Signature Page Follows]

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IN WITNESS WHEREOF, the undersigned has caused this Compliance Certificate to be executed as of the date first written above.

VERTEX PHARMACEUTICALS INCORPORATED

By:_____
Jeffrey Leiden, Chief Executive Officer

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Exhibit G

Restricted Activities Agreement

[See attached]

[*]

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Exhibit H

[*] **Deferred Consideration Agreement**

[See attached]

[*]

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Exhibit I

Deferred Consideration Acknowledgment

[See attached]

[*]

Exhibit J

Designated Individual Agreement

[See attached]

[*]

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AMENDMENT TO AGREEMENT AND PLAN OF MERGER

THIS AMENDMENT TO AGREEMENT AND PLAN OF MERGER (this "**Amendment**") is entered into as of June 12, 2019, among Vertex Pharmaceuticals Incorporated, a company incorporated under the laws of Massachusetts ("**Buyer**"), VXP Merger Sub, Inc., a Delaware corporation ("**Merger Sub**"), Exonics Therapeutics, Inc., a Delaware corporation (the "**Company**"), and Shareholder Representative Services LLC, a Colorado limited liability company, solely in its capacity as the shareholders' representative (the "**Shareholders' Representative**").

WHEREAS, Buyer, Merger Sub, the Company and the Shareholders' Representative entered into an Agreement and Plan of Merger dated as of June 6, 2019 (the "**Agreement**");

WHEREAS, the parties hereto desire to amend the Agreement on the terms set forth in this Amendment; and

WHEREAS, the Board of Directors of the Company deems it advisable and in the best interests of the Company and the Company Shareholders to enter into this Amendment.

NOW, THEREFORE, in consideration of the foregoing and the respective covenants and agreements set forth below, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Buyer, Merger Sub, the Company and the Shareholders' Representative agree as follows:

1. Capitalized terms used herein and not defined herein shall have the meaning set forth in the Agreement.

2. Exhibit B (Written Consent) is amended and restated in its entirety as set forth on Exhibit A to this Amendment.

3. Clause (y) of the last sentence of Section 1.4 of the Agreement is amended and restated in its entirety as follows:

   (y) [*] is not, and shall be deemed not to be, Affiliates of the Company or Buyer for purposes of this definition of "Affiliate."

4. The last sentence of Section 2.17 of the Agreement is amended and restated in its entirety as follows:

5. Notwithstanding the foregoing, Buyer confirms that it will not, absent a change in Applicable Law, [*] (y) the Company has provided a valid certificate and notice pursuant to Treasury Regulations Section 1.897-2(h) in accordance with Section 3.2.4 of this Agreement.

6. The last sentence of Section 6.8 of the Agreement is amended and restated in its entirety as follows:

   Notwithstanding anything to the contrary in this Section 6.8, but in furtherance and not limitation of the foregoing, [*].

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7. The second sentence of the second paragraph of Section 6.10.2 is amended and restated in its entirety as follows:

   In addition to the foregoing, after the Closing, Buyer may disclose the Company's Confidential Information to third parties in connection with the actual or potential research, development, manufacture or commercialization of Products; *provided* that such disclosure is covered by terms of confidentiality and non-use no less stringent than those set forth herein and/or in the UT Agreements (if applicable).

8. Clause (ii)(c) of Section 6.11.3 is amended and restated in its entirety as follows:

   [*].

9. A new Section 6.12.4 is added to the Agreement as follows:

   No later than 2 Business Days prior to the Closing Date, the Company shall deliver to each Deferred Holder (other than the [*]) and each Designated Individual a statement, in a form reasonably satisfactory to Buyer, setting forth each such Deferred Holder's and Designated Individual's Restricted Shares (as such term is defined in the Deferred Consideration Acknowledgments, in respect of Deferred Holders, and Designated Individual Agreements, in respect of Designated Individuals).

10. Section 8.4.9 of the Agreement is deleted in its entirety.

11. The parties shall not amend, modify or supplement any provision of the Agreement as amended by this Amendment or this Amendment specific to the University of Texas Southwestern Medical Center or its Affiliates in a manner that would impair the rights of, or impose obligations on, The University of Texas Southwestern Medical Center without the prior written consent of The University of Texas Southwestern Medical Center (such consent not to be unreasonably withheld, conditioned or delayed).

12. This Amendment may be executed in any number of counterparts, each of which will be an original and all of which, taken together, will constitute the same document. Counterparts may be signed and delivered by facsimile or digital transmission (*e.g.*, .pdf), each of which will be binding when received by the applicable Party.

13. Except as modified by this Amendment, the Agreement is in all other respects hereby ratified and confirmed and remains in full force and effect. From and after the date of this Amendment, each reference in the Agreement to "this Agreement," "hereof," "hereunder" or words of like import, and all references to the Agreement in any and all agreements, instruments, documents, notes, certificates and other writings of every kind of nature (other than in this Amendment or as otherwise expressly provided) will be deemed to mean the Agreement, as amended by this Amendment, whether or not this Amendment is expressly referenced.

[*Remainder of page intentionally left blank*]

[*] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM IF PUBLICLY DISCLOSED.

IN WITNESS WHEREOF, the parties have caused this Amendment to be signed by their duly authorized representatives as of the date first written above.

VERTEX PHARMACEUTICALS INCORPORATED

By: Paul Silva
Name: Paul Silva
Title: Senior Vice President, Corporate Controller

[Signature Page to Amendment to Agreement and Plan of Merger]

IN WITNESS WHEREOF, the parties have caused this Amendment to be signed by their duly authorized representatives as of the date first written above.

VXP MERGER SUB, INC.

By: Paul Silva
Name: Paul Silva
Title: Assistant Treasurer

[Signature Page to Amendment to Agreement and Plan of Merger]

IN WITNESS WHEREOF, the parties have caused this Amendment to be signed by their duly authorized representatives as of the date first written above.

EXONICS THERAPEUTICS, INC.

By: John Ripple
Name: John Ripple
Title: CEO

[Signature Page to Amendment to Agreement and Plan of Merger]

IN WITNESS WHEREOF, the parties have caused this Amendment to be signed by their duly authorized representatives as of the date first written above.

SHAREHOLDER REPRESENTATIVE SERVICES LLC, **SOLELY IN ITS CAPACITY AS SHAREHOLDERS' REPRESENTATIVE**

By: Sam Riffe Name: Sam Riffe
Title: Managing Director

[Signature Page to Amendment to Agreement and Plan of Merger]

Exhibit A

Amended and Restated Written Consent

[Attached]

[*]

[*] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM IF PUBLICLY DISCLOSED.

Exhibit 31.1

CERTIFICATION

I, Jeffrey M. Leiden, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Vertex Pharmaceuticals Incorporated;

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

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

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

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

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

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

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

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

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

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

Date: August 1, 2019

/s/ Jeffrey M. Leiden

Jeffrey M. Leiden
Chief Executive Officer and President

Exhibit 31.2

CERTIFICATION

I, Charles F. Wagner, Jr., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Vertex Pharmaceuticals Incorporated;

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

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

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

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

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

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

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

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

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

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

Date: August 1, 2019

/s/ Charles F. Wagner, Jr.

Charles F. Wagner, Jr.
Executive Vice President and Chief Financial Officer

Exhibit 32.1

SECTION 906 CEO/CFO CERTIFICATION

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code) each of the undersigned officers of Vertex Pharmaceuticals Incorporated, a Massachusetts corporation (the "Company"), does hereby certify, to such officer's knowledge, that the Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 (the "Form 10-Q") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 1, 2019

/s/ Jeffrey M. Leiden

Jeffrey M. Leiden
Chief Executive Officer and President

Date: August 1, 2019

/s/ Charles F. Wagner, Jr.

Charles F. Wagner, Jr.
Executive Vice President and Chief Financial Officer

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