VERTEX PHARMACEUTICALS INC / MA
Form 10-Q
October 31, 2016
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

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

FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2016

or

o 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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes x No o

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

Large accelerated filer x Accelerated filer o Non-accelerated filer o Smaller reporting company o
(Do not check if a smaller reporting company)

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

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

Class	Outstanding at October 21, 2016
Common Stock, par value $0.01 per share	248,033,389

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FOR THE QUARTER ENDED SEPTEMBER 30, 2016

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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®” and “ORKAMBI®” 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.

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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 September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Revenues:				
Product revenues, net	$409,689	$302,511	$1,229,750	$593,774
Royalty revenues	3,835	5,759	12,713	17,628
Collaborative revenues	259	1,546	1,008	2,999
Total revenues	413,783	309,816	1,243,471	614,401
Costs and expenses:				
Cost of product revenues	53,222	30,269	147,165	55,059
Royalty expenses	855	1,691	2,813	6,068
Research and development expenses	272,370	246,284	799,238	685,741
Sales, general and administrative expenses	106,055	99,772	322,921	280,026
Restructuring expenses, net	8	1,826	1,038	682
Total costs and expenses	432,510	379,842	1,273,175	1,027,576
Loss from operations	(18,727)	(70,026)	(29,704)	(413,175)
Interest expense, net	(20,140)	(21,134)	(60,993)	(63,552)
Other (expenses) income, net	(167)	(1,326)	3,025	(5,025)
Loss before provision for income taxes	(39,034)	(92,486)	(87,672)	(481,752)
Provision for income taxes	503	1,330	24,118	31,760
Net loss	(39,537)	(93,816)	(111,790)	(513,512)
Loss (Income) attributable to noncontrolling interest	696	(1,333)	(33,207)	30,909
Net loss attributable to Vertex	$(38,841)	$(95,149)	$(144,997)	$(482,603)
Amounts per share attributable to Vertex common shareholders:				
Net loss:				
Basic	$(0.16)	$(0.39)	$(0.59)	$(2.00)
Diluted	$(0.16)	$(0.39)	$(0.59)	$(2.00)
Shares used in per share calculations:				
Basic	244,920	241,969	244,529	240,749
Diluted	244,920	241,969	244,529	240,749

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

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Net loss	$(39,537)	$(93,816)	$(111,790)	$(513,512)
Changes in other comprehensive loss:				
Unrealized holding gains (losses) on marketable securities	(96)	56	104	186
Unrealized gains (losses) on foreign currency forward contracts, net of tax	2,149	4,546	1,936	572
Foreign currency translation adjustment	(2,508)	(1,384)	(7,709)	(164)
Total changes in other comprehensive loss	(455)	3,218	(5,669)	594
Comprehensive loss	(39,992)	(90,598)	(117,459)	(512,918)
Comprehensive (income) loss attributable to noncontrolling interest	696	(1,333)	(33,207)	30,909
Comprehensive loss attributable to Vertex	$(39,296)	$(91,931)	$(150,666)	$(482,009)

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

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

	September 30, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents	$ 719,692	$ 714,768
Marketable securities, available for sale	408,749	327,694
Restricted cash and cash equivalents (VIE)	58,420	78,910
Accounts receivable, net	182,229	173,838
Inventories	71,799	57,207
Prepaid expenses and other current assets	61,012	54,736
Total current assets	1,501,901	1,407,153
Property and equipment, net	687,613	697,715
Intangible assets	284,340	284,340
Goodwill	50,384	50,384
Cost method investments	53,314	—
Notes receivable	—	30,000
Restricted cash	22,087	22,083
Other assets	10,002	6,912
Total assets	$ 2,609,641	$ 2,498,587
Liabilities and Shareholders’ Equity		
Current liabilities:		
Accounts payable	$ 50,914	$ 74,942
Accrued expenses	292,015	305,820
Deferred revenues, current portion	9,247	16,296
Accrued restructuring expenses, current portion	3,923	7,894
Capital lease obligations, current portion	17,772	15,545
Senior secured term loan, current portion	297,751	71,296
Other liabilities, current portion	51,219	14,374
Total current liabilities	722,841	506,167
Deferred revenues, excluding current portion	6,559	9,714
Accrued restructuring expenses, excluding current portion	3,314	7,464

Capital lease obligations, excluding current portion	31,719	42,923
Deferred tax liability	133,270	110,439
Construction financing lease obligation, excluding current portion	473,073	472,611
Senior secured term loan, net of current portion and discount	—	223,863
Other liabilities, excluding current portion	30,524	31,778
Total liabilities	1,401,300	1,404,959
Commitments and contingencies		
Shareholders' equity:		
Preferred stock, $0.01 par value; 1,000,000 shares authorized; none issued and outstanding at September 30, 2016 and December 31, 2015	—	—
Common stock, $0.01 par value; 500,000,000 and 500,000,000 shares authorized at September 30, 2016 and December 31, 2015, respectively; 248,028,962 and 246,306,818 shares issued and outstanding at September 30, 2016 and December 31, 2015, respectively	2,446	2,427
Additional paid-in capital	6,429,726	6,197,500
Accumulated other comprehensive (loss) income	(3,845)	1,824
Accumulated deficit	(5,406,781)	(5,261,784)
Total Vertex shareholders' equity	1,021,546	939,967
Noncontrolling interest	186,795	153,661
Total shareholders' equity	1,208,341	1,093,628
Total liabilities and shareholders' equity	$ 2,609,641	$ 2,498,587

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

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

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Vertex Shareholders' Equity	Noncontrolling Interest	Total Shareholders' Equity
	Shares	Amount						
Balance at December 31, 2014	241,764	$2,385	$5,777,154	$ 917	$(4,705,450)	$1,075,006	$ 21,177	$1,096,183
Other comprehensive loss, net of tax	—	—	—	594	—	594	—	594
Net loss	—	—	—	—	(482,603)	(482,603)	(30,909)	(513,512)
Issuance of common stock under benefit plans	3,882	34	139,419	—	—	139,453	—	139,453
Stock-based compensation expense	—	—	189,697	—	—	189,697	—	189,697
Noncontrolling interest upon consolidation	—	$—	$—	$ —	$—	$—	$ 164,317	$164,317
Balance at September 30, 2015	245,646	$2,419	$6,106,270	$ 1,511	$(5,188,053)	$922,147	$ 154,585	$1,076,732
Balance at December 31, 2015	246,307	$2,427	$6,197,500	$ 1,824	$(5,261,784)	$939,967	$ 153,661	$1,093,628
Other comprehensive loss, net of tax	—	—	—	(5,669)	—	(5,669)	—	(5,669)
Net (loss) income	—	—	—	—	(144,997)	(144,997)	33,207	(111,790)
Issuance of common stock under benefit plans	1,722	19	50,875	—	—	50,894	—	50,894
Stock-based compensation expense	—	—	181,351	—	—	181,351	(73)	181,278
Balance at September 30, 2016	248,029	$2,446	$6,429,726	$ (3,845)	$(5,406,781)	$1,021,546	$ 186,795	$1,208,341

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

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

	Nine Months Ended September 30,	
	2016	2015
Cash flows from operating activities:		
Net loss	$(111,790)	$(513,512)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Stock-based compensation expense	178,623	186,379
Depreciation and amortization expense	45,947	46,596
Deferred income taxes	23,544	7,793
Other non-cash items, net	(904)	(2,876)
Changes in operating assets and liabilities:		
Accounts receivable, net	(9,760)	(88,735)
Inventories	(11,536)	(16,127)
Prepaid expenses and other assets	(8,979)	(23,737)
Accounts payable	(21,532)	6,283
Accrued expenses and other liabilities	26,121	45,163
Accrued restructuring expense	(8,151)	(28,051)
Deferred revenues	(10,204)	(13,751)
Net cash provided by (used in) operating activities	91,379	(394,575)
Cash flows from investing activities:		
Purchases of marketable securities	(616,625)	(292,135)
Maturities of marketable securities	535,379	804,588
Expenditures for property and equipment	(41,775)	(32,775)
Decrease in restricted cash and cash equivalents (VIE)	20,490	14,830
Investments in other entities	(20,000)	—
Investment in CRISPR Series B preferred stock	(3,075)	—
(Increase) decrease in other assets	(90)	(982)
Increase in restricted cash and cash equivalents	(3)	(21,980)
Payment for acquisition of variable interest entity	—	(80,000)
Net cash (used in) provided by investing activities	(125,699)	391,546
Cash flows from financing activities:		
Issuances of common stock under benefit plans	51,165	139,689
Payments on capital lease obligations	(13,330)	(16,515)
Payments on construction financing lease obligation	(356)	(281)
Proceeds from capital lease financing	2,030	13,386
Net cash provided by financing activities	39,509	136,279
Effect of changes in exchange rates on cash	(265)	(2,259)
Net increase in cash and cash equivalents	4,924	130,991
Cash and cash equivalents—beginning of period	714,768	625,259
Cash and cash equivalents—end of period	$719,692	$756,250
Supplemental disclosure of cash flow information:		
Cash paid for interest	$64,662	$64,231
Cash received from (paid for) income taxes	$1,617	$(1,261)
Capitalization of costs related to construction financing lease obligation	$824	$—

Issuances of common stock exercises from employee benefit plans receivable	$19	$(236)

The Company has reclassified certain amounts in the period ending September 30, 2015 between operating, investing, and financing to correct improper classifications.

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

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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 (i) the Company, (ii) its wholly-owned subsidiaries and (iii) consolidated variable interest entities (VIEs). All material intercompany balances and transactions have been eliminated. The Company operates in one segment, pharmaceuticals.

Certain information and footnote disclosures normally included in the Company's annual financial statements 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 September 30, 2016 and 2015.

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, 2015, which are contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2015 that was filed with the Securities and Exchange Commission (the "SEC") on February 16, 2016 (the "2015 Annual Report on Form 10-K"). The Company has reclassified certain amounts in the condensed consolidated balance sheets for the period ended December 31, 2015 between Accounts receivables, net and Prepaid expenses and other current assets to conform to the current year presentation.

Use of Estimates and Summary of Significant Accounting Policies

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, inventories, research and development expenses, stock-based compensation expense, restructuring expense, the fair value of intangible assets, goodwill, contingent consideration, noncontrolling interest, the consolidation of VIEs, leases, the fair value of cash flow hedges 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.

The Company's significant accounting policies are described in Note A, "Nature of Business and Accounting Policies," in the 2015 Annual Report on Form 10-K.

Recent Accounting Pronouncements

In 2014, the Financial Accounting Standards Board ("FASB") issued amended guidance applicable to revenue recognition that will be effective for the year ending December 31, 2018. Early adoption is permitted for the year-ending December 31, 2017. The new guidance applies a more principle based approach to recognizing revenue. The new guidance must be adopted using either a full retrospective approach for all periods presented or a modified retrospective approach. The Company is in the process of evaluating the new guidance and determining the expected effect on its consolidated financial statements.

In 2016, the FASB issued amended guidance applicable to leases that will be effective for the year ending December 31, 2019. Early adoption is permitted. This update requires an entity to recognize assets and liabilities for leases with lease terms of more than 12 months on the balance sheet. The Company is in the process of evaluating the new guidance and determining the expected effect on its consolidated financial statements.

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In 2016, the FASB issued amended guidance applicable to share-based compensation to employees that will be effective for the year ending December 31, 2017. Early adoption is permitted. This update simplifies the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. The Company is in the process of evaluating the new guidance and determining the expected effect on its consolidated financial statements.

In 2016, the FASB issued amended guidance for the classification of certain cash receipts and cash payments on the statement of cash flows to reduce existing diversity in practice. The new accounting guidance is effective for the year ending December 31, 2017. Early adoption is permitted. The Company is in the process of evaluating the new guidance and determining the expected effect on its 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 2015 Annual Report on Form 10-K. The Company did not adopt any new accounting pronouncements during the nine months ended September 30, 2016 that had a material effect on its condensed consolidated financial statements.

B. Product Revenues, Net

The Company sells its products principally to a limited number of specialty pharmacy providers and selected regional wholesalers in North America as well as government-owned and supported customers in international markets (collectively, its “Customers”). The Company's Customers in North America subsequently resell the products to patients and health care providers. The Company recognizes net revenues from product sales upon delivery to the Customer as long as (i) there is persuasive evidence that an arrangement exists between the Company and the Customer, (ii) collectibility is reasonably assured and (iii) the price is fixed or determinable.

In order to conclude that the price is fixed or determinable, the Company must be able to (i) calculate its gross product revenues from sales to Customers and (ii) reasonably estimate its net product revenues upon delivery to its Customers' locations. The Company calculates gross product revenues based on the price that the Company charges its Customers. The Company estimates its net product revenues by deducting from its gross product revenues (a) trade allowances, such as invoice discounts for prompt payment and Customer fees, (b) estimated government and private payor rebates, chargebacks and discounts, (c) estimated reserves for expected product returns and (d) estimated costs of co-pay assistance programs for patients, as well as other incentives for certain indirect customers.

The Company makes significant estimates and judgments that materially affect the Company's recognition of net product revenues. In certain instances, the Company may be unable to reasonably conclude that the price is fixed or determinable at the time of delivery, in which case it defers the recognition of revenues. Once the Company is able to determine that the price is fixed or determinable, it recognizes the revenues associated with the units in which revenue recognition was deferred.

The following table summarizes activity in each of the product revenue allowance and reserve categories for the nine months ended September 30, 2016:

	Trade Allowances	Rebates, Chargebacks and Discounts	Product Returns	Other Incentives	Total
	(in thousands)				
Balance at December 31, 2015	$2,089	$ 44,669	$1,228	$ 1,310	$49,296
Provision related to current period sales	14,680	98,242	1,631	5,547	120,100
Adjustments related to prior period sales	(82)	(1,081)	(205)	(80)	(1,448)
Credits/payments made	(14,505)	(70,718)	(345)	(5,607)	(91,175)

Balance at September 30, 2016	$2,182	$ 71,112	$2,309	$ 1,170	$76,773

In the three and nine months ended September 30, 2016, the Company sold ORKAMBI in France pursuant to early access programs. The Company has not recognized any product revenues based on these sales because the price is not fixed or determinable due to the ongoing negotiations regarding the reimbursement rate for ORKAMBI in France. If the negotiated reimbursement rate in France is lower than the price currently being paid by Customers in France under these programs, the Company would reimburse the difference between such prices to the Customers. The cash received from sales in France is included as a liability on the Company's condensed consolidated balance sheet, and the increase in "other liabilities, current portion" from December 31, 2015 to September 30, 2016 is primarily due to this liability.

C. Collaborative Arrangements

Cystic Fibrosis Foundation Therapeutics Incorporated

The Company has a research, development and commercialization agreement with Cystic Fibrosis Foundation Therapeutics Incorporated (“CFFT”) that was originally entered into in May 2004, and was most recently amended on October 13, 2016 (the “2016 Amendment”). Pursuant to the agreement, as amended, the Company has 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 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), lumacaftor and VX-661 (tezacaftor). For combination products, such as ORKAMBI, sales will be allocated equally to each of the active pharmaceutical ingredients in the combination product consistent with the allocation of net sales for ORKAMBI since the Company began marketing ORKAMBI in mid-2015.

In each of the fourth quarter of 2015 and first quarter of 2016, CFFT earned a commercial milestone payment of $13.9 million from the Company upon achievement of certain sales levels of lumacaftor. There are no additional commercial milestone payments payable by the Company to CFFT pursuant to the agreement. Pursuant to the 2016 Amendment, the CFFT provided the Company an upfront program award of $75.0 million and agreed to provide development funding to the Company of up to $6.0 million annually.

The Company began marketing KALYDECO in the United States and certain countries in the European Union in 2012 and began marketing ORKAMBI in the United States in 2015. The Company received approval for ORKAMBI In the European Union in 2015 and in Canada and Australia in 2016. The Company has royalty obligations to CFFT for ivacaftor, lumacaftor and VX-661 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 extensions. 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 VX-661 (tezacaftor) that expire in 2027 and 2028, respectively, subject to potential extension.

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(unaudited)

CRISPR Therapeutics AG

In October 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 up to six CRISPR-Cas9-based targets. In connection with the CRISPR Agreement, the Company made an upfront payment to CRISPR of $75.0 million and a $30.0 million investment in CRISPR pursuant to a convertible loan agreement that converted into preferred stock in January 2016. The Company expensed $75.0 million to research and development, and the $30.0 million investment was recorded at cost and is classified as a long-term asset on the Company’s condensed consolidated balance sheet. In the second quarter of 2016, the Company made an additional preferred stock investment in CRISPR of approximately $3.1 million. In connection with CRISPR's initial public offering in October 2016, the Company made an additional $10 million common share investment in CRISPR and the Company's preferred stock investment in CRISPR converted into common shares.

The Company will fund all of the discovery activities conducted pursuant to the CRISPR Agreement. For potential hemoglobinapathy treatments, including treatments for sickle cell disease, the Company and CRISPR will share equally all research and development costs and worldwide revenues. For other targets that the Company elects to license, the Company would lead all development and global commercialization activities. For each of up to six targets that the Company elects to license, other than hemoglobinapathy targets, CRISPR has the potential to receive up to $420.0 million in development, regulatory and commercial milestones and royalties on net product sales.

The Company may terminate the CRISPR Agreement upon 90 days’ notice to CRISPR prior to any product receiving marketing approval or upon 270 days’ notice after a product has received marketing approval. The CRISPR Agreement also may be terminated by either party for a material breach by the other, subject to notice and cure provisions. Unless earlier terminated, the CRISPR Agreement will continue in effect until the expiration of the Company's payment obligations under the CRISPR Agreement.

Variable Interest Entities

The Company has entered into several agreements pursuant to which it has licensed rights to certain drug candidates from third-party collaborators, which has resulted in the consolidation of the third parties' financial statements into the Company's condensed consolidated financial statements as VIEs. In order to account for the fair value of the contingent milestone and royalty payments related to these collaborations under GAAP, the Company uses present-value models based on assumptions regarding the probability of achieving the relevant milestones, estimates regarding the timing of achieving the milestones, estimates of future product sales and the appropriate discount rates. The Company bases its estimate of the probability of achieving the relevant milestones on industry data for similar assets and its own experience. The discount rates used in the valuation model represent a measure of credit risk and market risk associated with settling the liabilities. Significant judgment is used in determining the appropriateness of these assumptions at each reporting period. Changes in these assumptions could have a material effect on the fair value of the contingent milestone and royalty payments. The following collaborations are reflected in the Company's financial statements as consolidated VIEs:

Parion Sciences, Inc.

License and Collaboration Agreement

In June 2015, the Company entered into a strategic collaboration and license agreement (the "Parion Agreement") with Parion Sciences, Inc. (“Parion”). Pursuant to the Parion Agreement, the Company is collaborating with Parion to develop investigational epithelial sodium channel (“ENaC”) inhibitors, including VX-371 (formerly P-1037) and

VX-551 (formerly P-1055), for the potential treatment of cystic fibrosis, or CF, and other pulmonary diseases. The Company is leading development activities for VX-371 and VX-551 and is responsible for all costs, subject to certain exceptions, related to development and commercialization of the compounds.

Pursuant to the Parion Agreement, the Company has worldwide development and commercial rights to Parion's lead investigational ENaC inhibitors, VX-371 and VX-551, for the potential treatment of CF and all other pulmonary diseases and

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(unaudited)

has the option to select additional compounds discovered in Parion's research program. Parion received an $80.0 million up-front payment and has the potential to receive up to an additional (i) $490.0 million in development and regulatory milestone payments for development of ENaC inhibitors in CF, including $360.0 million related to global filing and approval milestones, (ii) $370.0 million in development and regulatory milestones for VX-371 and VX-551 in non-CF pulmonary indications and (iii) $230.0 million in development and regulatory milestones should the Company elect to develop an additional ENaC inhibitor from Parion's research program. The Company has agreed to pay Parion tiered royalties that range from the low double digits to mid-teens as a percentage of potential sales of licensed products.

The Company may terminate the Parion Agreement upon 90 days' notice to Parion prior to any licensed product receiving marketing approval or upon 180 days' notice after a licensed product has received marketing approval. If the Company experiences a change of control prior to the initiation of the first Phase 3 clinical trial for a licensed product, Parion may terminate the Parion Agreement upon 30 days' notice, subject to the Company's right to receive specified royalties on any subsequent commercialization of licensed products. The Parion Agreement also may be terminated by either party for a material breach by the other, subject to notice and cure provisions. Unless earlier terminated, the Parion Agreement will continue in effect until the expiration of the Company's royalty obligations, which expire on a country-by-country basis on the later of (i) the date the last-to-expire patent covering a licensed product expires or (ii) ten years after the first commercial sale in the country.

The Company determined that Parion is a VIE based on, among other factors, the significance to Parion of the ENaC inhibitors licensed to the Company pursuant to the Parion Agreement and on the Company's power to direct the activities that most significantly affect the economic performance of Parion. Accordingly, the Company consolidated Parion's financial statements beginning on June 4, 2015. However, the Company's interests in Parion are limited to those accorded to the Company in the Parion Agreement.

Consideration for the Parion Agreement

The Company determined that the fair value of the consideration from the Company to Parion was $255.3 million as of June 4, 2015, which consisted of (i) an $80.0 million up-front payment, (ii) the estimated fair value of the contingent research and development milestones potentially payable by the Company to Parion and (iii) the estimated fair value of potential royalty payments payable by the Company to Parion. The Company valued the contingent milestone and royalty payments using (a) discount rates ranging from 4.1% to 5.9% for the development milestones and (b) a discount rate of 6.6% for royalties. The consideration paid and the preliminary fair value of the contingent milestone and royalty payments payable by the Company pursuant to the agreement are set forth in the table below:

	June 4, 2015 (in thousands)
Up-front payment	$ 80,000
Fair value of contingent milestone and royalty payments	175,340
Total	$ 255,340

Allocation of Assets and Liabilities

The Company allocated the total consideration to the assets and liabilities of Parion. The following table summarizes the final fair values of the assets and liabilities recorded on the effective date of the agreement:

	June 4, 2015

	(in thousands)
Intangible assets	$ 255,340
Net assets attributable to noncontrolling interests	(164,317)
Deferred tax liability	(91,023)
Net other assets (liabilities)	(10,468)
Goodwill	$ 10,468

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The Company recorded $255.3 million of intangible assets on the Company's condensed consolidated balance sheet for Parion's in-process research and development assets. These in-process research and development assets relate to Parion's pulmonary ENaC platform, including the intellectual property related to VX-371 and VX-551, that are licensed by Parion to the Company. The Company recorded Parion’s assets and liabilities including (i) the fair value of the intangible assets, (ii) the fair value of the net assets attributable to noncontrolling interest, and (iii) a deferred tax liability resulting from a basis difference in the intangible assets and certain other net liabilities held by Parion. The difference between the fair value of the consideration paid and the fair value of Parion’s net assets was recorded as goodwill.

BioAxone Biosciences, Inc.

In October 2014, the Company entered into a license and collaboration agreement (the “BioAxone Agreement”) with BioAxone Biosciences, Inc. (“BioAxone”), a privately-held biotechnology company, which resulted in the consolidation of BioAxone as a VIE beginning on October 1, 2014. The Company paid BioAxone initial payments of $10.0 million in the fourth quarter of 2014.

BioAxone has the potential to receive up to $90.0 million in milestones and fees, including development, regulatory and milestone payments and a license continuation fee. In addition, BioAxone would receive royalties and commercial milestones on future net product sales of VX-210, if any. The Company recorded an in-process research and development intangible asset of $29.0 million for VX-210 and a corresponding deferred tax liability of $11.3 million attributable to BioAxone. The Company holds an option to purchase BioAxone at a predetermined price. The option expires on the earliest of (a) the day the FDA accepts the Biologics License Application submission for VX-210, (b) the day the Company elects to continue the license instead of exercising the option to purchase BioAxone and (c) March 15, 2018, subject to the Company’s option to extend this date by one year.

Aggregate VIE Financial Information

An aggregate summary of net loss attributable to noncontrolling interest related to the Company's VIEs for the three and nine months ended September 30, 2016 and 2015 is as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Loss attributable to noncontrolling interest before provision for income taxes	$2,406	$1,743	$6,080	$3,322
(Benefit from) provision for income taxes	(510)	777	20,063	30,367
(Increase) decrease in fair value of contingent milestone and royalty payments	(1,200)	(3,853)	(59,350)	(2,780)
Net (income) loss attributable to noncontrolling interest	$696	$(1,333)	$(33,207)	$30,909

The increases in the fair value of the contingent milestone and royalty payments in the nine months ended September 30, 2016 were primarily due to a Phase 2 clinical trial of VX-371, a compound being developed pursuant to the Parion Agreement, achieving its primary safety endpoint in the second quarter of 2016. The fair value of the contingent milestone and royalty payments also reflects changes in market interest rates and the time value of money. During the three and nine months ended September 30, 2016 and 2015, the increase (decrease) in the fair value of the contingent milestone and royalty payments related to the Company's VIEs was as follows:

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	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Parion	$1,100	$4,481	$58,500	$2,860
BioAxone	100	(628)	850	(80)

As of September 30, 2016, the fair value of the contingent milestone and royalty payments related to the Parion Agreement and the BioAxone Agreement was $232.5 million and $28.8 million, respectively. As of December 31, 2015, the fair value of the contingent milestone and royalty payments related to the Parion collaboration and the BioAxone collaboration was $179.0 million and $28.0 million, respectively.

The following table summarizes items related to the Company's VIEs included in the Company's condensed consolidated balance sheets as of the dates set forth in the table:

	September 30, 2016	December 31, 2015
	(in thousands)	
Restricted cash and cash equivalents (VIE)	$58,420	$ 78,910
Prepaid expenses and other current assets	2,360	3,138
Intangible assets	284,340	284,340
Goodwill	19,391	19,391
Other assets	382	455
Accounts payable	1,122	676
Taxes payable	6,263	24,554
Other current liabilities	1,121	7,100
Deferred tax liability, net	133,270	110,438
Other liabilities	300	300
Noncontrolling interest	186,795	153,661

The Company has recorded the VIEs' cash and cash equivalents as restricted cash and cash equivalents (VIE) because (i) the Company does not have any interest in or control over the VIEs' cash and cash equivalents and (ii) the Company's agreements with each VIE do not provide for the VIEs' cash and cash equivalents to be used for the development of the assets that the Company licensed from the applicable VIE. Assets recorded as a result of consolidating the Company's VIEs' financial condition into the Company's balance sheet do not represent additional assets that could be used to satisfy claims against the Company's general assets.

Other Collaborations

The Company has entered into various agreements pursuant to which it collaborates with third parties, including inlicensing and outlicensing arrangements. Although the Company does not consider any of these arrangements to be material, the most notable of these arrangements are described below.

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Moderna Therapeutics, Inc.

In July 2016, the Company entered into a strategic collaboration and licensing agreement (the "Moderna Agreement") with Moderna Therapeutics, Inc. ("Moderna") pursuant to which the parties are seeking to identify and develop messenger Ribonucleic Acid ("mRNA") Therapeutics for the treatment of CF. In connection with the Moderna Agreement in the third quarter of 2016, the Company made an upfront payment to Moderna of $20.0 million and a $20.0 million cost-method investment in Moderna pursuant to a convertible promissory note that converted into preferred stock in August 2016. Moderna has the potential to receive future development and regulatory milestones of up to $275.0 million, including $220.0 million in approval and reimbursement milestones, as well as tiered royalty payments on future sales.

Under the terms of the Moderna Agreement, Moderna will lead discovery efforts and the Company will lead all preclinical, development and commercialization activities associated with the advancement of mRNA Therapeutics that result from this collaboration and will fund all expenses related to the collaboration.

The Company may terminate the Moderna Agreement by providing advanced notice to Moderna, with the required length of notice dependent on whether any product developed under the Moderna Agreement has received marketing approval. The Moderna Agreement also may be terminated by either party for a material breach by the other, subject to notice and cure provisions. Unless earlier terminated, the Moderna Agreement will continue in effect until the expiration of the Company's payment obligations under the Moderna Agreement.

Janssen Pharmaceuticals, Inc.

In June 2014, the Company entered into an agreement (the “Janssen Influenza Agreement”) with Janssen Pharmaceuticals, Inc. (“Janssen Inc.”), which was amended in October 2014 to clarify certain roles and responsibilities of the parties.

Pursuant to the Janssen Influenza Agreement, Janssen Inc. has an exclusive worldwide license to develop and commercialize certain drug candidates for the treatment of influenza, including VX-787. The Company received non-refundable payments of $35.0 million from Janssen Inc. in 2014, which were recorded as collaborative revenue. The Company has the potential to receive development, regulatory and commercial milestone payments as well as royalties on future product sales, if any. Janssen Inc. may terminate the Janssen Influenza Agreement, subject to certain exceptions, upon six months' notice.

Janssen Inc. is responsible for costs related to the development and commercialization of the compounds. During the three and nine months ended September 30, 2016, the Company recorded reimbursement for these development activities of $2.8 million and $10.6 million, respectively. During the three and nine months ended September 30, 2015, the Company recorded reimbursement for these development activities of $4.0 million and $18.7 million, respectively. The reimbursements are recorded as a reduction to development expense in the Company's condensed consolidated statements of operations primarily due to the fact that Janssen Inc. directs the activities and selects the suppliers associated with these activities.

D. Earnings Per Share

Basic net loss per share attributable to Vertex common shareholders is based upon the weighted-average number of common shares outstanding during the period, excluding restricted stock and restricted stock units that have been issued but are not yet vested. Diluted net loss 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.

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

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	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Stock options	12,947	12,025	12,947	12,025
Unvested restricted stock and restricted stock units	3,624	3,367	3,624	3,367

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. As of September 30, 2016, the Company's investments were primarily in money market funds, short-term government-sponsored enterprise securities, corporate debt securities and commercial paper.

As of September 30, 2016, all of the Company's financial assets 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 and short-term government-sponsored enterprise securities. The Company's financial assets valued based on Level 2 inputs consisted of corporate debt securities and commercial paper, which consisted of investments in highly-rated investment-grade corporations.

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The following table sets forth the Company's financial assets (excluding VIE cash and cash equivalents) and liabilities subject to fair value measurements:

	Fair Value Measurements as of September 30, 2016			
		Fair Value Hierarchy		
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Financial assets carried at fair value:				
Cash equivalents:				
Money market funds	$101,844	$101,844	$—	$ —
Marketable securities:				
Government-sponsored enterprise securities	130,431	130,431	—	—
Corporate debt securities	146,942	—	146,942	—
Commercial paper	131,376	—	131,376	—
Prepaid and other current assets:				
Foreign currency forward contracts	7,644	—	7,644	—
Other assets:				
Foreign currency forward contracts	217	—	217	—
Total financial assets	$518,454	$232,275	$286,179	$ —
Financial liabilities carried at fair value:				
Other liabilities, current portion:				
Foreign currency forward contracts	$(1,459)	$—	$(1,459)	$ —
Other liabilities, excluding current portion:				
Foreign currency forward contracts	(315)	—	(315)	—
Total financial liabilities	$(1,774)	$—	$(1,774)	$ —

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	Fair Value Measurements as of December 31, 2015			
		Fair Value Hierarchy		
	Total	Level 1	Level 2	Level 3
	(in thousands)			
Financial instruments carried at fair value (asset position):				
Cash equivalents:				
Money market funds	$199,507	$199,507	$—	$ —
Government-sponsored enterprise securities	85,994	85,994	—	—
Commercial paper	34,889	—	34,889	—
Corporate debt securities	11,533	—	11,533	—
Marketable securities:				
Government-sponsored enterprise securities	87,162	87,162	—	—
Commercial paper	99,123	—	99,123	—
Corporate debt securities	141,409	—	141,409	—
Prepaid and other current assets:				
Foreign currency forward contracts	5,161	—	5,161	—
Other assets:				
Foreign currency forward contracts	605	$—	605	$ —
Total financial assets	$665,383	$372,663	$292,720	$ —
Financial instruments carried at fair value (liability position):				
Other liabilities, current portion:				
Foreign currency forward contracts	$(769)	$—	$(769)	$ —
Other liabilities, excluding current portion:				
Foreign currency forward contracts	(132)	—	(132)	—
Total financial liabilities	$(901)	$—	$(901)	$ —

The Company's VIEs invested in cash equivalents consisting of money market funds of $57.9 million as of September 30, 2016, which are valued based on Level 1 inputs. These cash equivalents are not included in the table above. The Company’s noncontrolling interest related to VIEs includes the fair value of the contingent milestone and royalty payments, which are valued based on Level 3 inputs. Please refer to Note C, “Collaborative Arrangements,” for further information.

As of September 30, 2016, the fair value and carrying value of the Company's Term Loan was $297.8 million. The fair value of the Company's Term Loan was estimated based on Level 3 inputs computed using the effective interest rate of the Term Loan. The effective interest rate considers the timing and amount of estimated future interest payments as well as current market rates. Please refer to Note K, "Long-term Obligations" for further information regarding the Company's Term Loan.

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F. Marketable Securities

A summary of the Company's cash, cash equivalents and marketable securities is shown below:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
As of September 30, 2016				
Cash and cash equivalents:				
Cash and money market funds	$719,692	$ —	$ —	$719,692
Total cash and cash equivalents	$719,692	$ —	$ —	$719,692
Marketable securities:				
Government-sponsored enterprise securities (due within 1 year)	130,404	29	(2)	130,431
Commercial paper (due within 1 year)	131,099	277	—	131,376
Corporate debt securities (due within 1 year)	147,016	6	(80)	146,942
Total marketable securities	$408,519	$ 312	$ (82)	$408,749
Total cash, cash equivalents and marketable securities	$1,128,211	$ 312	$ (82)	$1,128,441
As of December 31, 2015				
Cash and cash equivalents:				
Cash and money market funds	$582,352	$ —	$ —	$582,352
Government-sponsored enterprise securities	85,994	—	—	85,994
Commercial paper	34,889	—	—	34,889
Corporate debt securities	11,533	—	—	11,533
Total cash and cash equivalents	$714,768	$ —	$ —	$714,768
Marketable securities:				
Government-sponsored enterprise securities (due within 1 year)	$87,176	$ —	$ (14)	$87,162
Commercial paper (due within 1 year)	98,877	246	—	99,123
Corporate debt securities (due within 1 year)	141,515	—	(106)	141,409
Total marketable securities	$327,568	$ 246	$ (120)	$327,694
Total cash, cash equivalents and marketable securities	$1,042,336	$ 246	$ (120)	$1,042,462

The Company has a limited number of marketable securities in insignificant loss positions as of September 30, 2016, which the Company does not intend to sell and has concluded it will not be required to sell before recovery of the amortized costs for the investment at maturity. There were no charges recorded for other-than-temporary declines in fair value of marketable securities nor gross realized gains or losses recognized in the three and nine months ended September 30, 2016 and 2015.

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G. Accumulated Other Comprehensive (Loss) Income

A summary of the Company's changes in accumulated other comprehensive (loss) income by component is shown below:

	Foreign Currency Translation Adjustment	Unrealized Holding Gains on Marketable Securities	Unrealized Gains (Losses) on Foreign Currency Forward Contracts, net of tax	Total
	(in thousands)			
Balance at December 31, 2015	$(2,080)	$ 126	$ 3,778	$1,824
Other comprehensive (loss) income before reclassifications	(7,709)	104	6,715	(890)
Amounts reclassified from accumulated other comprehensive loss	—	—	(4,779)	(4,779)
Net current period other comprehensive (loss) income	$(7,709)	$ 104	$ 1,936	$(5,669)
Balance at September 30, 2016	$(9,789)	$ 230	$ 5,714	$(3,845)

	Foreign Currency Translation Adjustment	Unrealized Holding (Losses) Gains on Marketable Securities	Unrealized Gains (Losses) on Foreign Currency Forward Contracts	Total
	(in thousands)			
Balance at December 31, 2014	$(971)	$ (123)	$ 2,011	$917
Other comprehensive (loss) income before reclassifications	(164)	186	4,072	4,094
Amounts reclassified from accumulated other comprehensive loss	—	—	(3,500)	(3,500)
Net current period other comprehensive (loss) income	$(164)	$ 186	$ 572	$594
Balance at September 30, 2015	$(1,135)	$ 63	$ 2,583	$1,511

H. Hedging

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 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 on a prospective and retrospective basis. If the Company determines 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 September 30, 2016, all hedges were determined to be highly effective and the Company had not recorded any ineffectiveness related to the hedging program.

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

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	As of September 30, 2016	As of December 31, 2015
Foreign Currency	(in thousands)	
Euro	$156,245	$103,362
British pound sterling	73,684	78,756
Australian dollar	26,550	27,167
Total foreign currency forward contracts	$256,479	$209,285

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 the Company's condensed consolidated balance sheets:

As of September 30, 2016

Assets		Liabilities	
Classification	Fair Value	Classification	Fair Value
	(in thousands)		
Prepaid and other current assets	$7,644	Other liabilities, current portion	$(1,459)
Other assets	217	Other liabilities, excluding current portion	(315)
Total assets	$7,861	Total liabilities	$(1,774)

As of December 31, 2015

Assets		Liabilities	
Classification	Fair Value	Classification	Fair Value
	(in thousands)		
Prepaid and other current assets	$5,161	Other liabilities, current portion	$(769)
Other assets	605	Other liabilities, excluding current portion	(132)
Total assets	$5,766	Total liabilities	$(901)

The following table summarizes the potential effect of offsetting derivatives by type of financial instrument on the Company's condensed consolidated balance sheets:

	As of September 30, 2016				
	Gross Amounts Recognized	Gross Amounts Offset	Gross Amounts Presented	Gross Amounts Not Offset	Legal Offset
Foreign currency forward contracts	(in thousands)				
Total assets	$7,861	$—	$7,861	$(1,774)	$6,087
Total liabilities	$(1,774)	$—	$(1,774)	$1,774	$—

	As of December 31, 2015				
	Gross Amounts Recognized	Gross Amounts Offset	Gross Amounts Presented	Gross Amounts Not Offset	Legal Offset
Foreign currency forward contracts	(in thousands)				
Total assets	$5,766	$—	$5,766	$(901)	$4,865
Total liabilities	$(901)	$—	$(901)	$901	$—

I. Inventories

Inventories consisted of the following:

	As of September 30, 2016	As of December 31, 2015
	(in thousands)	
Raw materials	$9,824	$ 8,696
Work-in-process	46,057	40,695
Finished goods	15,918	7,816
Total	$71,799	$ 57,207

J. Intangible Assets and Goodwill

Intangible Assets

As of September 30, 2016 and December 31, 2015, in-process research and development intangible assets of $284.3 million were recorded on the Company's condensed consolidated balance sheet.

In June 2015, in connection with entering into the Parion Agreement, the Company recorded an in-process research and development intangible asset of $255.3 million based on the Company’s estimate of the fair value of Parion’s lead investigational ENaC inhibitors, including VX-371 and VX-551, that were licensed by the Company from Parion. The Company aggregated the fair value of the ENaC inhibitors into a single intangible asset because the phase, nature and risks of development as well as the amount and timing of benefits associated with the assets were similar. In October 2014, the Company recorded an in-process research and development intangible asset of $29.0 million based on the Company’s estimate of the fair value of VX-210, a drug candidate for patients with spinal cord injuries that was licensed by the Company from BioAxone. The Company used discount rates of 7.1% and 7.5% in the present-value models to estimate the fair values of the ENaC inhibitors and VX-210 intangible assets, respectively.

Goodwill

As of September 30, 2016 and December 31, 2015, goodwill of $50.4 million was recorded on the Company's condensed consolidated balance sheet.

K. Long-term Obligations

Fan Pier Leases

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 (the “Buildings”) at Fan Pier in Boston, Massachusetts (the “Fan Pier Leases”). The Company commenced lease payments in December 2013, and will make lease payments pursuant to the Fan Pier Leases through December 2028. The Company has an option to extend the term of the Fan Pier Leases for an additional ten years.

Because the Company was involved in the construction project, the Company was deemed for accounting purposes to be the owner of the Buildings during the construction period and recorded project construction costs incurred by the landlord. Upon completion of the Buildings, the Company evaluated the Fan Pier Leases and determined that the Fan Pier Leases did not meet the criteria for “sale-leaseback” treatment. Accordingly, the Company began depreciating the asset and incurring interest expense related to the financing obligation in 2013. The Company bifurcates its lease payments pursuant to the Fan Pier Leases into (i) a portion that is 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 is treated as an operating lease that commenced in 2011.

Property and equipment, net, included $492.3 million and $502.3 million as of September 30, 2016 and December 31, 2015, respectively, related to construction costs for the Buildings. The carrying value of the Company's lease agreement liability for the Buildings was $472.7 million and $473.0 million as of September 30, 2016 and December 31, 2015, respectively.

San Diego Lease

On December 2, 2015, the Company entered into a lease agreement for 3215 Merryfield Row, San Diego, California with ARE-SD Region No. 23, LLC. Pursuant to this agreement, the Company agreed to lease approximately 170,000 square feet of office and laboratory space in a building to be built in San Diego, California. The lease will commence upon completion of the building, scheduled for the first half of 2018, and will extend for 16 years from the commencement date. Pursuant to the lease agreement, during the initial 16-year term, the Company will pay an average of approximately $10.2 million per year in aggregate rent, exclusive of operating expenses. The Company has

the option to extend the lease term for up to two additional five-year terms.

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Term Loan

In July 2014, the Company entered into a credit agreement with the lenders party thereto, and Macquarie US Trading LLC ("Macquarie"), as administrative agent. The credit agreement provided for a $300.0 million senior secured term loan ("Macquarie Loan"). On October 13, 2016, the Company terminated and repaid all outstanding obligations under the Macquarie Loan.

The Macquarie Loan initially bore interest at a rate of 7.2% per annum, which was reduced to 6.2% per annum based on the FDA's approval of ORKAMBI. The Term Loan bore interest at a rate of LIBOR plus 5.0% per annum during the third year of the term. If the Company had not terminated and repaid all outstanding obligations, the maturity date of all loans under the facilities was July 9, 2017.

Based on the Company's evaluation of the Macquarie Loan, the Company determined that the Macquarie Loan contained several embedded derivatives. These embedded derivatives were clearly and closely related to the host instrument because they related to the Company's credit risk; therefore, they did not require bifurcation from the host instrument, the Macquarie Loan.

The Company incurred $5.3 million in fees paid to Macquarie that were recorded as a discount on the Macquarie Loan and were recorded as interest expense using the effective interest method over the term of the loan in the Company’s condensed consolidated statements of operations. As of September 30, 2016 and December 31, 2015, the unamortized discount associated with the Macquarie Loan that was included in the senior secured term loan caption on the Company’s condensed consolidated balance sheet was $2.1 million and $4.6 million, respectively.

Subsequent Event

On October 13, 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”). 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 proceeds of the borrowing under the Credit Agreement were used primarily to repay the Company's existing indebtedness under the Macquarie Loan. The Company will incur a charge of $2.2 million in the fourth quarter of 2016 related to a loss on extinguishment attributable to the Macquarie Loan. 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 2.5%, 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 to be 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.

L. Stock-based Compensation Expense

During the three and nine months ended September 30, 2016 and 2015, the Company recognized the following stock-based compensation expense:

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	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Stock-based compensation expense by type of award:				
Stock options	$28,773	$39,074	$86,859	$105,720
Restricted stock and restricted stock units	30,966	26,203	88,107	78,274
ESPP share issuances	2,425	1,738	6,385	5,703
Less stock-based compensation expense capitalized to inventories	(955)	(1,281)	(2,728)	(3,318)
Total stock-based compensation included in costs and expenses	$61,209	$65,734	$178,623	$186,379
Stock-based compensation expense by line item:				
Research and development expenses	$39,980	$44,701	$115,068	$124,550
Sales, general and administrative expenses	21,229	21,033	63,555	61,829
Total stock-based compensation included in costs and expenses	$61,209	$65,734	$178,623	$186,379

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

	As of September 30, 2016	
	Unrecognized Expense, Net of Estimated Forfeitures	Weighted-average Recognition Period
	(in thousands)	(in years)
Type of award:		
Stock options	$185,148	2.66
Restricted stock and restricted stock units	$206,336	2.57
ESPP share issuances	$2,886	0.47

The following table summarizes information about stock options outstanding and exercisable at September 30, 2016:

	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)
$18.93–$20.00	137	1.35	$ 18.93	137	$ 18.93
$20.01–$40.00	1,816	3.32	$ 34.08	1,815	$ 34.07
$40.01–$60.00	1,937	5.89	$ 48.19	1,719	$ 48.57
$60.01–$80.00	1,348	7.38	$ 75.90	809	$ 75.51
$80.01–$100.00	4,598	8.74	$ 90.62	1,271	$ 89.38
$100.01–$120.00	1,627	8.33	$ 109.33	606	$ 109.29
$120.01–$134.69	1,484	8.80	$ 130.60	510	$ 130.06
Total	12,947	7.29	$ 80.99	6,867	$ 66.29

M. Other Arrangements

Sale of HIV Protease Inhibitor Royalty Stream

In 2008, the Company sold to a third party its rights to receive royalty payments from GlaxoSmithKline plc, net of royalty amounts to be earned by and due to a third party, for a one-time cash payment of $160.0 million. These royalty payments relate to net sales of HIV protease inhibitors, which had been developed pursuant to a collaboration agreement between the Company and GlaxoSmithKline plc. As of September 30, 2016, the Company had $15.8 million in deferred revenues related to the one-time cash payment, which it is recognizing over the life of the collaboration agreement with GlaxoSmithKline plc based on the units-of-revenue method. In addition, the Company continues to recognize royalty revenues equal to the amount of the third-party subroyalty and an offsetting royalty expense for the third-party subroyalty payment.

N. Income Taxes

The Company is subject to United States federal, state, and foreign income taxes. For the three and nine months ended September 30, 2016, the Company recorded a provision for income taxes of $0.5 million and $24.1 million, respectively. The provision for income taxes recorded in the three and nine months ended September 30, 2016 included a benefit of $0.5 million and a provision of $20.1 million, respectively, related to the Company's VIEs' income tax provision. The Company has no liability for taxes payable by the Company's VIEs and the income tax provision and related liability have been allocated to noncontrolling interest (VIE). For the three and nine months ended September 30, 2015, the Company recorded a provision for income taxes of $1.3 million and $31.8 million, respectively, primarily related to the Company's VIEs' income tax provision.

As of September 30, 2016 and December 31, 2015, the Company had unrecognized tax benefits of zero and $0.4 million, respectively. The Company recognizes interest and penalties related to income taxes as a component of income tax expense. As of September 30, 2016, no interest and penalties have been accrued. The Company does not expect that its unrecognized tax benefits will materially increase within the next twelve months. The Company did not recognize any material interest or penalties related to uncertain tax positions as of September 30, 2016 and December 31, 2015. For the three months ended September 30, 2016, the Company reduced the balance of its unrecognized tax benefits by approximately $0.4 million due to the expiration of statute of limitations, which reduced the Company’s effective tax rate.

The Company continues to maintain a valuation allowance against certain deferred tax assets where it is more likely than not that the deferred tax asset will not be realized because of its extended history of annual losses.

The Company files United States 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 before 2011 or any other major taxing jurisdiction for years before 2009, except where the Company has net operating losses or tax credit carryforwards that originated before 2009. The Company currently is under examination by the Internal Revenue Service for the year ended December 31, 2011 and in Delaware, Canada and Quebec for varying periods including the years ended December 31, 2011 through 2014. No adjustments have been reported. The Company is not under examination by any other jurisdictions for any tax year. The Company concluded audits with Pennsylvania and Texas during 2016 and Massachusetts and New York during 2015 with no material adjustments.

The Company currently intends to reinvest the total amount of its unremitted earnings. At September 30, 2016, foreign earnings, which were not significant, have been retained indefinitely by foreign subsidiary companies for reinvestment; therefore, no provision has been made for income taxes that would be payable upon the distribution of such earnings, and it would not be practicable to determine the amount of the related unrecognized deferred income tax liability. Upon repatriation of those earnings, in the form of dividends or otherwise, the Company would be subject to United States federal income taxes (subject to an adjustment for foreign tax credits) and withholding taxes payable to the various foreign countries.

O. Restructuring Liabilities

2003 Kendall Restructuring

In 2003, the Company adopted a plan to restructure its operations to coincide with its increasing internal emphasis on advancing drug candidates through clinical development to commercialization. The restructuring liability relates to specialized laboratory and office space that is leased to the Company pursuant to a 15-year lease that terminates in 2018. The Company has not used more than 50% of this space since it adopted the plan to restructure its operations in 2003. This unused laboratory and office space currently is subleased to third parties.

The activities related to the restructuring liability for the three and nine months ended September 30, 2016 and 2015 were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Liability, beginning of the period	$6,388	$9,924	$7,944	$11,596
Cash payments	(5,340)	(3,975)	(13,104)	(10,544)
Cash received from subleases	2,866	2,919	8,882	8,194
Restructuring expense (income)	30	146	222	(232)
Liability, end of the period	$3,944	$9,014	$3,944	$9,014

Fan Pier Move Restructuring

In connection with the relocation of its Massachusetts operations to Fan Pier in Boston, Massachusetts, which commenced in 2013, the Company is incurring restructuring charges related to its remaining lease obligations at its facilities in Cambridge, Massachusetts. The majority of these restructuring charges were recorded in the third quarter of 2014 upon decommissioning three facilities in Cambridge. During the first quarter of 2015, the Company terminated two of these lease agreements resulting in a credit to restructuring expense equal to the difference between the Company's estimated future cash flows related to its lease obligations for these facilities and the termination payment paid to the Company's landlord on the effective date of the termination. The third major facility included in this restructuring activity is 120,000 square feet of the Kendall Square Facility that the Company continued to use for its operations following its 2003 Kendall Restructuring. The rentable square footage in this portion of the Kendall Square Facility was subleased to a third party in February 2015. The Company will continue to incur charges through April 2018 related to the difference between the Company's estimated future cash flows related to this portion of the Kendall Square Facility, which include an estimate for sublease income to be received

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from the Company's sublessee and its actual cash flows. The Company discounted the estimated cash flows related to this restructuring activity at a discount rate of 9%.

The activities related to the restructuring liability for the three and nine months ended September 30, 2016 and 2015 were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Liability, beginning of the period	$4,863	$9,017	$5,964	$33,390
Cash payments	(4,199)	(3,070)	(10,451)	(25,421)
Cash received from subleases	2,539	1,820	7,308	1,820
Restructuring expense (income)	90	51	472	(1,971)
Liability, end of the period	$3,293	$7,818	$3,293	$7,818

Other Restructuring Activities

The Company has engaged in several other restructuring activities that are unrelated to its 2003 Kendall Restructuring and the Fan Pier Move Restructuring. The most significant activity commenced in October 2013 when the Company adopted a restructuring plan that included (i) a workforce reduction primarily related to the commercial support of INCIVEK following the continued and rapid decline in the number of patients being treated with INCIVEK as new medicines for the treatment of HCV infection neared approval and (ii) the write-off of certain assets. This action resulted from the Company's decision to focus its investment on future opportunities in CF and other research and development programs.

The activities related to the Company's other restructuring liabilities for the three and nine months ended September 30, 2016 and 2015 were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)			
Liability, beginning of the period	$1,233	$902	$1,450	$869
Cash payments	(1,121)	(1,559)	(1,794)	(2,782)
Restructuring expense	(112)	1,629	344	2,885
Liability, end of the period	$—	$972	$—	$972

P. Commitments and Contingencies

Financing Arrangements

As of September 30, 2016, the Company had irrevocable stand-by letters of credit outstanding that were issued in connection with property leases and other similar agreements totaling $21.9 million that were cash collateralized. The cash used to support these letters of credit is included in restricted cash, as of September 30, 2016, on the Company's condensed consolidated balance sheet. Effective as of October 13, 2016, the letters of credit are covered by the Company's credit agreement with Bank of America, N.A., as administrative agent and the lenders referred to therein, and as a result, are no longer cash collateralized.

Litigation

On May 28, 2014, a purported shareholder class action Local No. 8 IBEW Retirement Plan & Trust v. Vertex Pharmaceuticals Incorporated, et al. was filed in the United States District Court for the District of Massachusetts, naming the Company and certain of the Company's current and former officers and directors as defendants. The lawsuit alleged that the Company made material misrepresentations and/or omissions of material fact in the

Company's disclosures during the period from May 7, 2012 through May 29, 2012, all in violation of Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder. The purported class consists of all persons (excluding defendants) who purchased the Company's common stock between May 7, 2012 and May 29, 2012. The plaintiffs seek unspecified monetary damages, costs and attorneys' fees as well as disgorgement of the proceeds from certain individual defendants' sales of the Company's stock. On October 8, 2014, the Court approved Local No. 8 IBEW Retirement Fund as lead plaintiff, and Scott and Scott LLP as lead counsel for the plaintiff and the putative class. On February 23, 2015, the Company filed a reply to the plaintiffs' opposition to its motion to dismiss. The court heard oral argument on the motion to dismiss on March 6, 2015 and took the motion under advisement. On September 30, 2015, the court granted the Company's motion to dismiss. On October 15, 2015, the plaintiff filed a notice of appeal. The First Circuit Court of Appeals issued a scheduling order on December 24, 2015. On February 2, 2016, the Plaintiff filed their opening brief and the Company filed its opposition brief on March 7, 2016. On March 24, 2016, the plaintiff filed their reply brief. Oral argument on the appeal took place on July 26, 2016. On October 3, 2016, the First Circuit Court of Appeals affirmed the district court's dismissal of the Plaintiff's complaint. As of September 30, 2016, the Company has not recorded any reserves for this purported class action.

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 September 30, 2016 or December 31, 2015.

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

OVERVIEW

We are in the business of discovering, developing, manufacturing and commercializing medicines for serious diseases. We use precision medicine approaches with the goal of creating transformative medicines for patients in specialty markets. 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 indications, while maintaining our financial strength. Our two marketed products are ORKAMBI and KALYDECO.

Cystic Fibrosis

ORKAMBI

ORKAMBI (lumacaftor in combination with ivacaftor) was approved by the United States Food and Drug Administration, or FDA, in July 2015 and by the European Commission in November 2015, for the treatment of patients with CF twelve years of age and older who are homozygous for the F508del mutation in their cystic fibrosis transmembrane conductance regulator, or CFTR, gene. ORKAMBI was approved for this patient population in Canada and Australia in the first quarter of 2016. In September 2016, the FDA approved ORKAMBI for the treatment of patients with CF six to eleven years of age who are homozygous for the F508del mutation in their CFTR gene. Our future ORKAMBI net product revenues in the United States will reflect the number of patients for whom treatment with ORKAMBI is initiated, the proportion of initiated patients who remain on treatment, patient compliance with the recommended treatment regimen and the level of rebates, chargebacks, discounts and other adjustments to our ORKAMBI gross product revenues. We believe that there currently are approximately 11,000 patients in the United States who are eligible for treatment with ORKAMBI. The country-by-country reimbursement approval process in ex-U.S. markets is ongoing. We believe that there are approximately 12,000 patients with CF twelve years of age and older who are homozygous for the F508del mutation in Europe and approximately an aggregate of 2,500 patients with CF twelve years of age and older who are homozygous for the F508del mutation in Canada and Australia.

We have completed enrollment in a Phase 3 clinical trial evaluating lumacaftor in combination with ivacaftor in approximately 200 patients with CF six to eleven years of age who are homozygous for the F508del mutation in their CFTR gene. We expect data from this clinical trial to be available by the end of 2016 and if successful, we expect to submit a Marketing Authorization Application to the European Medicines Agency seeking approval of ORKAMBI in this patient population in the European Union in the first half of 2017. We believe that there are approximately 3,400 patients with CF six to eleven years of age who are homozygous for the F508del mutation in Europe.

We recently initiated a Phase 3 clinical trial for lumacaftor in combination with ivacaftor in patients with CF two to five years of age who are homozygous for the F508del mutation in their CFTR gene. The first part of the two-part clinical trial is evaluating safety and pharmacokinetics to inform dose selection for the second part of the clinical trial. The primary endpoint of the second part of the clinical trial is safety and tolerability, with multiple efficacy measurements as secondary endpoints.

KALYDECO

KALYDECO (ivacaftor) was approved in 2012 in the United States and European Union as a treatment for patients with CF six years of age and older who have the G551D mutation in their CFTR gene. Since 2012, we have increased the number of patients who are being treated with KALYDECO in the United States and ex-U.S. markets by expanding the label for KALYDECO to include patients with CF who have additional mutations in their CFTR gene and to include patients in additional age demographics. We believe that there are approximately 4,000 patients in North America, Europe and Australia who are currently eligible for treatment with KALYDECO.

We have initiated a Phase 3 clinical trial for ivacaftor in patients with CF less than two years of age to evaluate the effect of ivacaftor on markers of CF disease in young children. The clinical trial utilizes a weight-based dose of ivacaftor granules that can be mixed in soft foods or liquids. The clinical trial is enrolling patients with one of the ten CFTR gene mutations for which KALYDECO is currently approved.

VX-661

VX-661 (tezacaftor) is an orally-administered CFTR corrector drug candidate that we are evaluating in a Phase 3 development program in combination with ivacaftor in multiple CF patient populations who have at least one copy of

the F508del mutation in their CFTR gene. Details of the patient population and status of each of the ongoing clinical trials in this development program are as follows:

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- Two copies of the F508del in their CFTR gene: We have completed enrollment in this clinical trial and expect data from this clinical trial to be available in the first half of 2017.
- One copy of the F508del mutation in their CFTR gene and a second mutation in their CFTR gene that results in a gating defect in the CFTR protein: We plan to complete enrollment in this clinical trial in early 2017.
- One copy of the F508del mutation in their CFTR gene and a second mutation in their CFTR gene that results in residual CFTR function: We have completed enrollment in this clinical trial and expect data from this clinical trial to be available in the first half of 2017.

If supported by data from the Phase 3 clinical program, Vertex plans to submit an NDA to the FDA for VX-661 in combination with ivacaftor in the second half of 2017.

In the third quarter of 2016, we completed an interim futility analysis of efficacy data from the first part of a clinical trial in patients with one copy of the F508del mutation in their CFTR gene and a second mutation that results in minimal CFTR function. The analysis showed that the combination of VX-661 and ivacaftor did not result in a pre-specified improvement in lung function in this patient group. The independent Data Safety Monitoring Board, or DSMB, recommended that we stop the clinical trial and not initiate enrollment in the second part of this clinical trial. There were no safety concerns noted in the DSMB's review of the data. We are closing this clinical trial based on the recommendation of the DSMB.

In addition to evaluating the efficacy of the combination regimen, these Phase 3 clinical trials will provide safety data on the combination of VX-661 and ivacaftor to support the planned development of a triple combination regimen that includes a next-generation corrector in combination with VX-661 and ivacaftor.

ENaC Inhibition

VX-371 is an investigational epithelial sodium channel, or ENaC, inhibitor, we are evaluating in a Phase 2 development program in collaboration with Parion Sciences, Inc., or Parion. In the second quarter of 2016, Parion completed a Phase 2 clinical trial in approximately 142 patients with CF with no restriction on the mutations in their CFTR gene. The primary endpoint of the clinical trial was safety as compared to patients on placebo. Secondary endpoints evaluated the effect on mean absolute forced expiratory volume in one second, or FEV_1 and patient-reported respiratory symptoms as reported in the CF questionnaire-revised, or CFQ-R. The clinical trial met its primary safety endpoint and data from the clinical trial showed that VX-371 was generally well tolerated. There were no statistically significant changes in FEV_1 or CFQ-R for patients who received VX-371.

In the first quarter of 2016, we initiated a Phase 2a clinical trial evaluating VX-371 in approximately 150 patients on ORKAMBI, both with and without the addition of hypertonic saline, who have two copies of the F508del mutation in their CFTR gene. The primary endpoints of this clinical trial are safety and mean absolute change from baseline in FEV_1 at day 28 as compared to patients on placebo.

In vitro, VX-371 showed a meaningful change in cilia beat frequency when VX-371 was used in combination with ORKAMBI in human bronchial epithelial cells with two copies of the F508del mutation, but did not show a meaningful change in cilia beat frequency when VX-371 was used alone.

Next-generation CFTR Corrector Compounds

We are developing next-generation CFTR corrector compounds that we plan to evaluate as part of triple combination treatment regimens. We plan to initiate Phase 2 clinical trials of:

- VX-440 to evaluate the safety and efficacy of 4-week dosing of VX-440 in combination with tezacaftor and ivacaftor in approximately 40 patients with CF who have one copy of the F508del mutation in their CFTR gene and a second mutation that results in minimal CFTR function and approximately 25 patients with CF with two copies of the F508del mutation in their CFTR gene; and
- VX-152 to evaluate the safety and efficacy of 2-week dosing of VX-152 in combination with tezacaftor and ivacaftor in approximately 35 patients with CF who have one copy of the F508del mutation in their CFTR gene and a second mutation that results in minimal CFTR function and approximately 25 patients with CF with two copies of the F508del mutation in their CFTR gene.

Data from these clinical trials are expected in the second half of 2017 and if successful, are intended to support the potential initiation of Phase 3 development of VX-440 and a longer-duration Phase 2b or registrational program for VX-152.

We also plan to begin Phase 1 development of an additional next-generation corrector, VX-659, by the end of 2016. The Phase 1 clinical trial is expected to enroll healthy volunteers and will also include an arm to evaluate triple combination dosing

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in CF patients who have one copy of the F508del mutation in their CFTR gene and a second mutation that results in minimal CFTR function. If successful, we plan to initiate a Phase 2 clinical trial of VX-659 in the second half of 2017. In addition to VX-659, we expect to move a fourth next-generation corrector from research into clinical development in 2017.

Research and Development

We are engaged in a number of other research and mid- and early-stage development programs, including in the areas of oncology, pain and neurology.

Oncology

We are conducting two Phase 1/2 clinical trials of VX-970, a protein kinase inhibitor of ataxia telangiectasia and Rad3-related, or ATR, in combination with commonly used DNA-damaging chemotherapies across a range of solid tumor types, including triple-negative breast cancer and non-small cell lung cancer. We also are in Phase 1 development of VX-803, a second ATR inhibitor, alone and in combination with chemotherapy. We have initiated Phase 1 clinical development of VX-984, a third oncology drug candidate, alone and in combination with pegylated liposomal doxorubicin.

Pain

We are developing VX-150 and VX-241, two drug candidates for the treatment of pain. We have initiated a six-week cross-over Phase 2 proof-of-concept clinical trial to evaluate VX-150 in approximately 100 patients with symptomatic osteoarthritis of the knee. Data from this clinical trial is expected by the end of 2016.

Acute Spinal Cord Injury

We are developing VX-210, a drug candidate for the treatment of acute spinal cord injury, that we exclusively licensed from BioAxone BioSciences, Inc. VX-210 is designed to inhibit a protein known as Rho that blocks neural regeneration after injury. We have initiated a Phase 2b/3 clinical trial to evaluate the efficacy and safety of VX-210 in patients with certain acute cervical spinal cord injuries.

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.

Recent Transactions

CFFT

In October 2016, we amended our research, development and commercialization agreement with Cystic Fibrosis Foundation Therapeutics Incorporated, or CFFT. Pursuant to the amendment, we have agreed to pay royalties ranging from low single digits to mid-single digits on certain compounds first synthesized and/or tested between March 1, 2014 and August 31, 2016 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, ORKAMBI, lumacaftor and VX-661. In connection with the amendment, CFFT provided us an upfront program award of $75.0 million and agreed to provide development funding to us of up to $6.0 million annually.

Credit Agreement

In October 2016, we entered into a credit agreement with Bank of America, N.A., as administrative agent and the lenders referred to therein. The agreement provides for a $500 million revolving facility, $300 million of which was drawn at closing. The agreement also provides that, subject to satisfaction of certain conditions, we may request that the borrowing capacity under the agreement be increased by an additional $300 million. All outstanding borrowings under the credit agreement mature on October 13, 2021. In connection with entry into the agreement, we terminated and repaid all outstanding obligations under our pre-existing credit agreement with Macquarie US Trading LLC, as administrative agent, and the other lenders party thereto.

Moderna

In July 2016, we entered into a strategic collaboration and licensing agreement with Moderna Therapeutics, Inc., pursuant to which we are seeking to identify and develop messenger Ribonucleic Acid Therapeutics for the treatment of CF. In

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connection with the agreement, we made an upfront payment to Moderna of $20.0 million and made a $20.0 million investment in Moderna pursuant to a convertible promissory note, that converted into preferred stock in August 2016.

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 and can take 10 to 15 years or more. 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 foreign jurisdictions. 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 foreign 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 United States federal and state laws, and comparable foreign laws pertaining to health care fraud and abuse, including anti-kickback and false claims statutes, 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. False claims laws prohibit anyone from 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 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 covered 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 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. Following the European Commission’s November 2015 approval of ORKAMBI in Europe, we are working to obtain government reimbursement for ORKAMBI on a country-by-country basis, because in many foreign countries

patients are unable to access prescription pharmaceutical products that are not reimbursed by their governments. Consistent with our experience with KALYDECO when it was first approved, we expect reimbursement discussions in ex-U.S. markets may take a significant period of time.

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RESULTS OF OPERATIONS

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Revenues	$413,783	$309,816	$103,967	34 %	$1,243,471	$614,401	$629,070	102 %
Operating costs and expenses	432,510	379,842	52,668	14 %	1,273,175	1,027,576	245,599	24 %
Other items, net	(20,114)	(25,123)	5,009	20 %	(115,293)	(69,428)	$(45,865)	(66)%
Net loss attributable to Vertex	$(38,841)	$(95,149)	$(56,308)	(59)%	$(144,997)	$(482,603)	$(337,606)	(70)%

Net Loss Attributable to Vertex

Net loss attributable to Vertex was $(38.8) million in the third quarter of 2016 as compared to a net loss attributable to Vertex of $(95.1) million in the third quarter of 2015. Our revenues increased significantly in the third quarter of 2016 as compared to the third quarter of 2015 due to increased ORKAMBI and KALYDECO net product revenues. Our operating costs and expenses increased in the third quarter of 2016 as compared to the third quarter of 2015 primarily due to increases in research and development expenses, sales, general and administrative expenses and cost of product revenues. In the near term, we expect net loss (income) attributable to Vertex will be dependent on expected increases in ORKAMBI net product revenues.

Net loss attributable to Vertex was $(145.0) million in the nine months ended September 30, 2016 as compared to a net loss attributable to Vertex of $(482.6) million in the nine months ended September 30, 2015. Our revenues increased significantly in the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015 due to increased ORKAMBI and KALYDECO net product revenues. Our operating costs and expenses increased in the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015 primarily due to increases in research and development expenses, sales, general and administrative expenses and cost of product revenues. Other items, net in the nine months ended September 30, 2016 included an aggregate of $58.5 million in charges related to the increase in the fair value of the contingent milestone payments and royalties payable by us to Parion.

Diluted Net Loss Per Share Attributable to Vertex Common Shareholders

Diluted net loss per share attributable to Vertex common shareholders was $(0.16) in the third quarter of 2016 as compared to a diluted net loss per share attributable to Vertex common shareholders of $(0.39) in the third quarter of 2015. Diluted net loss per share attributable to Vertex common shareholders was $(0.59) in the nine months ended September 30, 2016 as compared to a diluted net loss per share attributable to Vertex common shareholders of $(2.00) in the nine months ended September 30, 2015.

Revenues

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Product revenues, net	$409,689	$302,511	$107,178	35 %	$1,229,750	$593,774	$635,976	107 %
Royalty revenues	3,835	5,759	(1,924)	(33)%	12,713	17,628	(4,915)	(28)%
Collaborative revenues	259	1,546	(1,287)	(83)%	1,008	2,999	(1,991)	(66)%
Total revenues	$413,783	$309,816	$103,967	34 %	$1,243,471	$614,401	$629,070	102 %

Product Revenues, Net

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%

	(in thousands)					(in thousands)				
ORKAMBI	$234,046	$130,767	$103,279	79	%	$702,670	$130,767	$571,903	437	%
KALYDECO	175,608	165,929	9,679	6	%	$526,352	$450,991	$75,361	17	%
INCIVEK	35	5,815	(5,780)	(99)	%	728	12,016	(11,288)	(94)	%
Total product revenues, net	$409,689	$302,511	$107,178	35	%	$1,229,750	$593,774	$635,976	107	%

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Our total net product revenues increased in the third quarter and the nine months ended September 30, 2016 as compared to the third quarter and the nine months ended September 30, 2015 due to increased net product revenues from ORKAMBI, which was approved by the FDA in July 2015, and increased KALYDECO net product revenues. In September 2016, the FDA approved a label expansion for ORKAMBI, expanding the label to include patients with CF six to eleven years of age who are homozygous for the F508del mutation in their CFTR gene.

We believe that the level of our ORKAMBI revenues for the remainder of 2016 will be dependent on:

- the number of additional patients who begin treatment with ORKAMBI, including patients six to eleven years of age in the United States;
- the rate at which additional patients initiate treatment;
- the proportion of initiated patients who remain on treatment; and
- the compliance rate for patients who remain on treatment.

We expect ORKAMBI net product revenues to increase in the fourth quarter of 2016 as compared to the third quarter of 2016. In the short term, we expect that our ex-U.S. ORKAMBI net product revenues will be primarily from Germany due to the time it will take to complete the reimbursement discussions in other European countries. In the third quarter and the nine months ended September 30, 2016, we recognized approximately $22.8 million and $47.5 million, respectively, in ex-U.S. ORKAMBI net product revenues, which were mainly from Germany. We also are selling ORKAMBI in France pursuant to an early access program, but are not recognizing any revenues because the price is not determinable.

The increase in KALYDECO net product revenues in the third quarter and the nine months ended September 30, 2016, as compared to the third quarter and the nine months ended September 30, 2015, was primarily due to additional patients being treated with KALYDECO as we completed reimbursement discussions in various jurisdictions and to the increased number of patients eligible to receive KALYDECO through label expansions. In the third quarter and the nine months ended September 30, 2016, we recognized approximately $75.1 million and $227.6 million, respectively, in ex-U.S. KALYDECO net product revenues.

We have withdrawn INCIVEK from the market in the United States. We may continue to have small adjustments to INCIVEK revenues over the next several quarters as we adjust our INCIVEK reserves for rebates, chargebacks and discounts.

Royalty Revenues

Our royalty revenues were $3.8 million and $12.7 million in the third quarter and the nine months ended September 30, 2016, respectively, as compared to $5.8 million and $17.6 million in the third quarter and the nine months ended September 30, 2015, respectively. Our royalty revenues consist of (i) revenues related to a cash payment we received in 2008 when we sold our rights to certain HIV royalties and (ii) revenues related to certain third-party royalties payable by our collaborators on sales of HIV and HCV drugs that also result in corresponding royalty expenses.

Collaborative Revenues

Our collaborative revenues were $0.3 million and $1.0 million in the third quarter and the nine months ended September 30, 2016, respectively, as compared to $1.5 million and $3.0 million in the third quarter and the nine months ended September 30, 2015, respectively. Our collaborative revenues have historically fluctuated significantly from one period to another and may continue to fluctuate in the future.

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Operating Costs and Expenses

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Cost of product revenues	$53,222	$30,269	$22,953	76 %	$147,165	$55,059	$92,106	167 %
Royalty expenses	855	1,691	(836)	(49)%	2,813	6,068	(3,255)	(54)%
Research and development expenses	272,370	246,284	26,086	11 %	799,238	685,741	113,497	17 %
Sales, general and administrative expenses	106,055	99,772	6,283	6 %	322,921	280,026	42,895	15 %
Restructuring expenses, net	8	1,826	(1,818)	(100)%	1,038	682	356	52 %
Total costs and expenses	$432,510	$379,842	$52,668	14 %	$1,273,175	$1,027,576	$245,599	24 %

Cost of Product Revenues

Our cost of product revenues includes the cost of producing inventories that correspond 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 CFFT, our tiered third-party royalties on sales of KALYDECO and ORKAMBI, calculated as a percentage of net sales, range from the single digits to the sub-teens. Our cost of product revenues increased in the third quarter and nine months ended September 30, 2016 as compared to the third quarter and the nine months ended September 30, 2015, primarily due to increased net product revenues. The increase in cost of product revenues in the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015 also reflected the second and final $13.9 million commercial milestone that was earned by CFFT in the first quarter of 2016 related to sales of ORKAMBI and that was included in cost of product revenues in the first quarter of 2016. In future periods, our cost of product revenues will not be affected by commercial milestones on ORKAMBI, with our cost of product revenues generally tracking our net product revenues.

Royalty Expenses

Royalty expenses include expenses related to a subroyalty payable to a third party on net sales of an HIV protease inhibitor sold by GlaxoSmithKline and third-party royalties payable upon net sales of telaprevir by our collaborators in their territories. Royalty expenses do not include royalties we pay to CFFT on sales of KALYDECO and ORKAMBI, which instead are included in cost of product revenues. Royalty expenses in the third quarter and the nine months ended September 30, 2016 decreased by $0.8 million and $3.3 million, respectively, as compared to the third quarter and the nine months ended September 30, 2015, primarily as a result of decreased INCIVO (telaprevir) sales by our collaborator Janssen NV.

Research and Development Expenses

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Research expenses	$99,162	$69,342	$29,820	43 %	$242,058	$200,099	$41,959	21 %
Development expenses	173,208	176,942	(3,734)	(2)%	557,180	485,642	71,538	15 %
Total research and development expenses	$272,370	$246,284	$26,086	11 %	$799,238	$685,741	$113,497	17 %

Our research and development expenses include internal and external costs incurred for research and development of our drugs and drug candidates. 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 1, 2013, we have incurred $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

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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 2015 and the nine months ended September 30, 2016, 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. We cannot make a meaningful estimate when, if ever, our clinical development programs will generate revenues and cash flows.

Research Expenses

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Research Expenses:								
Salary and benefits	$21,525	$21,542	$(17)	— %	$61,503	$61,796	$(293)	— %
Stock-based compensation expense	14,023	16,342	(2,319)	(14)%	38,088	43,199	(5,111)	(12)%
Laboratory supplies and other direct expenses	11,726	8,755	2,971	34 %	33,410	28,339	5,071	18 %
Outsourced services and acquired research assets	32,054	4,788	27,266	569 %	53,749	14,293	39,456	276 %
Infrastructure costs	19,834	17,915	1,919	11 %	55,308	52,472	2,836	5 %
Total research expenses	$99,162	$69,342	$29,820	43 %	$242,058	$200,099	$41,959	21 %

We maintain a substantial investment in research activities. Our research expenses increased by 43% in the third quarter of 2016 as compared to the third quarter of 2015 and increased by 21% in the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015. Outsourced services and acquired research assets in the third quarter of 2016 included a $20.0 million upfront payment to Moderna for which there was no comparable expense in the third quarter of 2015. We expect to continue to invest in our research programs with a focus on identifying drug candidates with the goal of creating transformative medicines.

Development Expenses

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Development Expenses:								
Salary and benefits	$44,788	$42,101	$2,687	6 %	$134,201	$123,723	$10,478	8 %
Stock-based compensation expense	25,957	28,359	(2,402)	(8)%	76,980	81,351	(4,371)	(5)%
Laboratory supplies and other direct expenses	10,784	6,696	4,088	61 %	32,039	22,113	9,926	45 %
Outsourced services	60,838	70,927	(10,089)	(14)%	216,881	177,324	39,557	22 %
Drug supply costs	2,655	2,977	(322)	(11)%	9,512	7,262	2,250	31 %
Infrastructure costs	28,186	25,882	2,304	9 %	87,567	73,869	13,698	19 %
Total development expenses	$173,208	$176,942	$(3,734)	(2)%	$557,180	$485,642	$71,538	15 %

Our development expenses in the third quarter of 2016 were consistent with development expenses in the third quarter of 2015. Our development expenses increased by $71.5 million, or 15%, in the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015, primarily due to an increase in outsourced services during the nine months ended September 30, 2016 related to ongoing clinical trials, including our Phase 3 development program for VX-661 in combination with ivacaftor, and an increase in infrastructure costs.

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Sales, General and Administrative Expenses

	Three Months Ended September 30,		Increase/(Decrease)		Nine Months Ended September 30,		Increase/(Decrease)	
	2016	2015	$	%	2016	2015	$	%
	(in thousands)				(in thousands)			
Sales, general and administrative expenses	$106,055	$99,772	$ 6,283	6 %	$322,921	$280,026	$ 42,895	15 %

Sales, general and administrative expenses increased by 6% in the third quarter of 2016 as compared to the third quarter of 2015 and increased by 15% in the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015, primarily due to increased investment in commercial support for ORKAMBI in ex-U.S. markets. We expect sales, general and administrative expenses during the fourth quarter of 2016 will be similar to our quarterly sales, general and administrative expenses in the nine months ended September 30, 2016.

Restructuring Expense, Net

We recorded restructuring expenses of $8.0 thousand and $1.0 million in the third quarter and the nine months ended September 30, 2016, respectively, as compared to restructuring expenses of $1.8 million and $0.7 million in the third quarter of 2015 and the nine months ended September 30, 2015, respectively. Our restructuring expenses in the third quarter and nine months ended September 30, 2016 primarily relate to adjustments to our restructuring liability in connection with the relocation of our corporate headquarters to Boston, Massachusetts.

Other Items

Interest Expense, Net

Interest expense, net was $20.1 million and $61.0 million in the third quarter and the nine months ended September 30, 2016, respectively as compared to $21.1 million and $63.6 million in the third quarter and the nine months ended September 30, 2015, respectively. During the remainder of 2016, we expect to incur approximately $15 million of interest expense associated with the leases for our corporate headquarters, approximately $2 million of interest expense related to the credit agreement we entered into in the fourth quarter of 2016 and approximately $2 million related to a loss on extinguishment attributable to the Macquarie Loan.

Other (Expense) Income, Net

Other (expense) income, net was an expense of $0.2 million and income of $3.0 million in the third quarter and the nine months ended September 30, 2016, respectively as compared to expense of $1.3 million and $5.0 million in the third quarter and the nine months ended September 30, 2015, respectively. Other (expense) income, net in each of the third quarter and nine months ended September 30, 2016 and the third quarter and the nine months ended September 30, 2015 was primarily due to foreign exchange gains and losses.

Income Taxes

We recorded a provision for income taxes of $0.5 million and $24.1 million in the third quarter and the nine months ended September 30, 2016, respectively as compared to $1.3 million and $31.8 million in the third quarter and the nine months ended September 30, 2015, respectively. The provision for income taxes in the third quarter and the nine months ended September 30, 2016 and 2015 was due to income tax on our VIEs, as well as state and foreign tax in various jurisdictions.

Noncontrolling Interest (VIEs)

The net loss (income) attributable to noncontrolling interest (VIEs) recorded on our condensed consolidated statements of operations reflects Parion and BioAxone's net loss (income) for the reporting period, adjusted for any changes during the reporting period in the fair value of the contingent milestone and royalty payments payable by us to Parion and BioAxone.

In the third quarter and the nine months ended September 30, 2016, the net loss (income) attributable to noncontrolling interest (VIEs) was a loss of $0.7 million and income of $33.2 million, respectively. In the third quarter and the nine months ended September 30, 2015, the net loss (income) attributable to noncontrolling interest (VIEs) was income of $1.3 million and a loss of $30.9 million, respectively.

LIQUIDITY AND CAPITAL RESOURCES

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As of September 30, 2016, we had cash, cash equivalents and marketable securities of $1.13 billion, which represented an increase of $86 million from $1.04 billion as of December 31, 2015. In the nine months ended September 30, 2016, we increased our cash, cash equivalents and marketable securities balance due to increased cash receipts in the nine months ended September 30, 2016 from product sales, partially offset by increased cash expenditures in the nine months ended September 30, 2016 related to, among other things, research and development expenses and sales, general and administrative expenses.

Our future cash flows will be substantially dependent on product sales of KALYDECO and ORKAMBI.

Sources of Liquidity

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 ORKAMBI and KALYDECO from the United States and ex-U.S. markets. In the short term, we expect that our ex-U.S. ORKAMBI net product revenues will be primarily from Germany due to the time it will take to complete the reimbursement discussions in other European countries.

We borrowed $300.0 million under a $500.0 million revolving credit facility that we entered into in October 2016 and, subject to certain conditions, we may request that the borrowing capacity under this credit agreement be increased by an additional $300.0 million. In 2014 and 2015, we also received significant proceeds from the issuance of common stock under our employee benefit plans, but we have received limited proceeds from employee benefit plans in 2016 and the amount and timing of future proceeds from employee benefits plans is uncertain. Other possible sources of 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 incur substantial operating expenses to conduct research and development activities and to operate our organization. Under the terms of our credit agreement entered into in October 2016, we are required to repay the outstanding principal amount (currently $300.0 million) in 2021. We also have substantial facility and capital lease obligations, including leases for two buildings in Boston, Massachusetts that continue through 2028. In addition, 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.

We expect that cash flows from KALYDECO and ORKAMBI, 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 KALYDECO and ORKAMBI and the potential introduction of one or more of our other drug candidates to the market, the level of our business development activities and the number, breadth, cost and prospects of our research and development programs.

Financing Strategy

In October 2016, we borrowed $300.0 million under a $500.0 million revolving credit facility that we entered into in October 2016. In addition, subject to certain conditions, we may request that the borrowing capacity under this credit agreement be increased by an additional $300.0 million. In connection with this new credit agreement, we terminated and repaid all outstanding obligations under our pre-existing credit agreement. We may raise additional capital 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, 2015, which was filed with the Securities and Exchange Commission, or SEC, on February 16, 2016. There have been no

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material changes from the contractual commitments and obligations previously disclosed in that Annual Report on Form 10-K, except that:

- On October 13, 2016, we entered into a credit agreement with Bank of America, N.A., as administrative agent and the lenders referred to therein. The agreement provides for a $500 million revolving facility, $300 million of which was drawn at closing. All outstanding borrowings under the credit agreement mature on October 13, 2021. In connection with entry into the agreement, we terminated and repaid all outstanding obligations under our pre-existing credit agreement with Macquarie US Trading LLC, as administrative agent, and the the other lenders party thereto.
- On July 1, 2016, we entered into a collaboration agreement with Moderna Therapeutics, Inc., or Moderna, pursuant to which Moderna is eligible to receive development and regulatory milestones of up to $275 million, as well as tiered royalty payments on future sales.

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 nine months ended September 30, 2016, 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, 2015, which was filed with the SEC on February 16, 2016.

RECENT ACCOUNTING PRONOUNCEMENTS

For a discussion of recent accounting pronouncements please refer to Note A, “Nature of Business and Accounting Policies—Recent Accounting Pronouncements,” in the 2015 Annual Report on Form 10-K. There were no new accounting pronouncements adopted during the nine months ended September 30, 2016 that had a material effect on our financial statements.

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.

Interest Rate Risk

As of September 30, 2016, we invest our cash in a variety of financial instruments, principally money market funds, short-term government-sponsored enterprise securities, U.S. Treasury securities, investment-grade corporate bonds and commercial paper. 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.

Foreign Exchange Market Risk

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

We maintain a foreign currency management program with the objective of reducing the impact of exchange rate fluctuations on our operating results and forecasted revenues and expenses denominated in foreign currencies.

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 September 30, 2016 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 September 30, 2016 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

Local No. 8 IBEW Retirement Plan & Trust v. Vertex Pharmaceuticals Incorporated, et al.

On May 28, 2014, a purported shareholder class action Local No. 8 IBEW Retirement Plan & Trust v. Vertex Pharmaceuticals Incorporated, et al. was filed in the United States District Court for the District of Massachusetts, naming us and certain of our current and former officers and directors as defendants. The lawsuit alleged that we made material misrepresentations and/or omissions of material fact in our disclosures during the period from May 7, 2012 through May 29, 2012, all in violation of Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder. The purported class consists of all persons (excluding defendants) who purchased our common stock between May 7, 2012 and May 29, 2012. The plaintiffs seek unspecified monetary damages, costs and attorneys' fees as well as disgorgement of the proceeds from certain individual defendants' sales of our stock. On October 8, 2014, the Court approved Local No. 8 IBEW Retirement Fund as lead plaintiff, and Scott and Scott LLP as lead counsel for the plaintiff and the putative class. We filed a motion to dismiss the complaint on December 8, 2014 and the plaintiffs filed their opposition to our motion to dismiss on January 22, 2015. On February 23, 2015, we filed a reply to the plaintiffs' opposition to our motion to dismiss. The court heard oral argument on our motion to dismiss on March 6, 2015 and took the motion under advisement. On September 30, 2015, the court granted our motion to dismiss. On October 15, 2015, the plaintiff filed a notice of appeal. The First Circuit Court of Appeals issued a scheduling order on December 24, 2015. On February 2, 2016, the Plaintiff filed their opening brief and we filed our opposition brief on March 7, 2016. On March 24, 2016, the plaintiff filed their reply brief. Oral arguments on the appeal took place on July 26, 2016. On October 3, 2016, the First Circuit Court of Appeals affirmed the district court's dismissal of the plaintiff's complaint.

DOJ Subpoena

In the third quarter of 2015, we received a subpoena from the United States Department of Justice related to our marketed medicines. This subpoena requests documents relating primarily to our Good Laboratory Practices in a bioanalytical laboratory. We are in the process of responding to the subpoena and intend to continue to cooperate.

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, 2015, which was filed with the SEC on February 16, 2016. There have been no material changes from the risk factors previously disclosed in that Annual Report on Form 10-K, except that:

Risk Relating to the Referendum of the United Kingdom’s Membership of the European Union.

On June 23, 2016, the United Kingdom, or the U.K., held a referendum in which voters approved an exit from the European Union, or the E.U., commonly referred to as "Brexit." As a result of the referendum, it is expected that the British government will begin negotiating the terms of the U.K.'s withdrawal from the E.U. A withdrawal could, among other outcomes, disrupt the free movement of goods, services and people between the U.K. and the E.U., undermine bilateral cooperation in key policy areas and significantly disrupt trade between the U.K. and the E.U. In addition, Brexit could lead to legal uncertainty and potentially divergent national laws and regulations as the U.K. determines which E.U. laws to replace or replicate. Given the lack of comparable precedent, it is unclear what financial, trade, regulatory and legal implications the withdrawal of the U.K. from the E.U. would have and how such withdrawal would affect us.

The announcement of Brexit caused significant volatility in global stock markets and currency exchange rate fluctuations that resulted in the strengthening of the U.S. dollar against foreign currencies in which we conduct business. The announcement of Brexit and the withdrawal of the U.K. from the E.U. may also create global economic uncertainty, which may cause third-party payors, including governmental organizations, to closely monitor their costs and reduce their spending budgets. Any of these effects of Brexit, among others, could adversely affect our business, financial condition and operating results.

Our indebtedness could materially and adversely affect our financial condition, and the terms of our credit agreement impose restrictions on our business, reducing our operational flexibility and creating default risks.

In October 2016, we entered into a credit agreement providing for a $500 million revolving facility, $300 million of which was drawn at closing. All outstanding borrowings under the credit agreement mature on October 13, 2021.

Our indebtedness could have important consequences to our business, including increasing our vulnerability to general adverse financial, business, economic and industry conditions, as well as other factors that are beyond our control. The credit agreement requires that we comply with certain financial covenants, including that we maintain (i) subject to certain limited exceptions, a consolidated leverage ratio of 3.00 to 1.00 and (ii) consolidated EBITDA of at least $200 million, in each case to be measured on a quarterly basis.

Further, the credit agreement includes negative covenants, subject to exceptions, restricting or limiting our ability and the ability of our subsidiaries to, among other things, incur additional indebtedness, grant liens, engage in certain investment, acquisition and disposition transactions, pay dividends, repurchase capital stock and enter into transactions with affiliates. As a result, we may be restricted from engaging in business activities that may otherwise improve our business. Failure to comply with the covenants could result in an event of default that could trigger acceleration of our indebtedness, which would require us to repay all amounts owing under the credit agreement and/or our capital leases and could have a material adverse effect on our business.

Additionally, our obligations under the credit agreement are unconditionally guaranteed by certain of our domestic subsidiaries. All obligations under the credit agreement, and the guarantees of those obligations, are secured by substantially all of our assets and the assets of all guarantors (excluding intellectual property, owned and leased real property and certain other excluded property), including the pledge of all or a portion of the equity interests of certain of our subsidiaries. If we fail to satisfy our obligations under the credit agreement or are unable to obtain sufficient funds to make payments, the lenders could foreclose on our pledged collateral.

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 from KALYDECO and ORKAMBI;
- our expectations regarding clinical trials, development timelines and regulatory authority filings and submissions for our drug candidates including, ivacaftor, lumacaftor, VX-661, VX-371 (formerly P-1037), VX-152, VX-440, VX-659, VX-970, VX-803, VX-984, VX-150, VX-241 and VX-210, as well as the MAA for ORKAMBI for the

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treatment of patients with CF six to eleven years of age who are homozygous for the F508del mutation in their CFTR gene and the NDA for VX-661 in combination with ivacaftor;

- our expectations regarding planned clinical trials for next-generation correctors based upon pre-clinical data;
- our ability to successfully market KALYDECO and ORKAMBI 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, including ivacaftor, lumacaftor, VX-661, VX-371 (formerly P-1037), VX-152, VX-440, VX-659, VX-970, VX-803, VX-984, VX-150, VX-241 and VX-210, 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, 2015, which was filed with the SEC on February 16, 2016. 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

The table set forth below shows all repurchases of securities by us during the three months ended September 30, 2016:

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Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet be Purchased Under the Plans or Programs
July 1, 2016 to July 31, 2016	10,732	$0.01	—	—
August 1, 2016 to August 31, 2016	17,534	$0.01	—	—
September 1, 2016 to September 30, 2016	17,423	$0.01	—	—

The repurchases were made under the terms of our Amended and Restated 2006 Stock and Option Plan and our Amended and Restated 2013 Stock and Option Plan. Under these plans, we award shares of restricted stock to our employees that typically are subject to a lapsing right of repurchase by us. We may exercise this right of repurchase if a restricted stock recipient’s service to us is terminated. If we exercise this right, we are required to repay the purchase price paid by or on behalf of the recipient for the repurchased restricted shares, which typically is the par value per share of $0.01. Repurchased shares are returned and are available for future awards under the terms of our Amended and Restated 2013 Stock and Option Plan.

Item 6. Exhibits

Exhibit Number	Exhibit Description
10.1	Vertex Pharmaceuticals Incorporated Employee Stock Purchase Plan, as amended and restated as of July 12, 2016 (1) *
10.2	Credit Agreement, dated as of October 13, 2016, among Vertex Pharmaceuticals Incorporated, Bank of America, N.A. and the other lenders party thereto.
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

(1) Incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed with the Securities and Exchange Commission on June 30, 2016.

* Management contract, compensatory plan or agreement.

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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

October 31, 2016 By: /s/ Ian F. Smith
Ian F. Smith
Executive Vice President and Chief Financial Officer
(principal financial officer and
duly authorized officer)