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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2016

OR

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

Commission file number 001-37359

BLUEPRINT MEDICINES CORPORATION
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**26-3632015**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
38 Sidney Street, Suite 200 Cambridge, Massachusetts	**02139**
(Address of Principal Executive Offices)	**(Zip Code)**

(617) 374-7580
(Registrant's Telephone Number, Including Area Code)

(Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report)

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

Indicate by check mark whether the registrant has submitted electronically 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 ☒ No ☐

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 the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	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 ☐ No ☒

Number of shares of the registrant's common stock, $0.001 par value, outstanding on November 8, 2016: 27,327,192

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Unless otherwise stated, all references to "us," "our," "Blueprint," "Blueprint Medicines," "we," the "Company" and similar designations in this Quarterly Report on Form 10-Q refer to Blueprint Medicines Corporation and its consolidated subsidiary, Blueprint Medicines Security Corporation.

FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this Quarterly Report on Form 10-Q are forward-looking statements. In some cases, you can identify forward-looking statements by words such as "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "seek," "should," "target," "will," "would" or the negative of these words or other comparable terminology, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this Quarterly Report on Form 10-Q include, but are not limited to, statements about:

- the initiation, timing, progress and results of our pre-clinical studies and clinical trials, including our Phase 1 clinical trials for BLU-285 and BLU-554, and our research and development programs;
- our ability to advance drug candidates into, and successfully complete, clinical trials;
- the accuracy of our estimates regarding expenses, future revenues and capital requirements;
- the timing or likelihood of regulatory filings and approvals;
- the commercialization of our drug candidates, if approved;
- the pricing and reimbursement of our drug candidates, if approved;
- the implementation of our business model, strategic plans for our business, drug candidates and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our drug candidates and technology;
- estimates of our expenses, future revenues, capital requirements and our needs for additional financing;
- the potential benefits of our existing rare genetic disease collaboration with Alexion Pharma Holding and our existing cancer immunotherapy collaboration with F. Hoffmann-La Roche Ltd and Hoffmann-La Roche Inc., as well as our ability to enter into other strategic arrangements;
- the development of companion diagnostic tests for our drug candidates, including our companion diagnostic with Ventana Medical Systems, Inc. for BLU-554 and our companion diagnostic with QIAGEN Manchester Limited for BLU-285;
- our ability to maintain and establish collaborations or obtain additional grant funding;
- our financial performance; and
- developments relating to our competitors and our industry.

Any forward-looking statements in this Quarterly Report on Form 10-Q reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. We have included important factors in the cautionary statements included in this Quarterly Report on Form 10-Q, particularly in the "Risk Factors" section, that could cause actual results or events to differ materially from the forward-looking statements that we make. Given these uncertainties, you should not place undue reliance on these forward-looking

statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make or enter into.

You should read this Quarterly Report on Form 10-Q and the documents that we have filed as exhibits to this Quarterly Report on Form 10-Q completely and with the understanding that our actual future results, performance or achievements may be materially different from what we expect. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

PART I – FINANCIAL INFORMATION

Item 1. Financial Statements

Blueprint Medicines Corporation
Condensed Consolidated Balance Sheets
(in thousands, except share and per share data)
(Unaudited)

	September 30, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents	$ 74,403	$ 162,707
Investments, available-for-sale	78,141	—
Restricted cash	—	119
Unbilled accounts receivable	3,455	3,414
Prepaid expenses and other current assets	3,449	4,176
Total current assets	159,448	170,416
Property and equipment, net	6,578	6,661
Other assets	557	555
Restricted cash	1,266	1,266
Total assets	$ 167,849	$ 178,898
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	1,848	2,455
Accrued expenses	7,410	6,436
Restricted stock liability	—	7
Current portion of deferred revenue	11,752	5,898
Current portion of lease incentive obligation	578	578
Current portion of term loan payable	2,792	3,266
Total current liabilities	24,380	18,640
Deferred rent, net of current portion	920	842
Restricted stock liability, net of current portion	1	1
Deferred revenue, net of current portion	39,595	7,742
Lease incentive obligation, net of current portion	2,937	3,370
Term loan payable, net of current portion	2,095	4,072
Other long term liabilities	211	252
Commitments (Note 11)		
Stockholders' equity:		
Preferred stock, $0.001 par value; 5,000,000 shares authorized; no shares issued and outstanding	—	—
Common stock, $0.001 par value; 120,000,000 shares authorized; 27,307,556 and 27,196,053 shares issued at September 30, 2016 and December 31, 2015, respectively, and 27,293,923 and 27,065,558 shares outstanding at September 30, 2016 and December 31, 2015, respectively	27	27
Additional paid-in capital	283,862	278,927
Accumulated other comprehensive income	27	—
Accumulated deficit	(186,206)	(134,975)
Total stockholders' equity	97,710	143,979
Total liabilities and stockholders' equity	$ 167,849	$ 178,898

Blueprint Medicines Corporation
Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except per share data)
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Collaboration revenue	$ 6,160	$ 3,426	$ 20,081	$ 6,765
Operating expenses:				
Research and development	18,150	11,681	57,058	32,157
General and administrative	4,893	4,222	14,227	10,832
Total operating expenses	23,043	15,903	71,285	42,989
Other income (expense):				
Other income (expense), net	158	6	350	(435)
Interest expense	(109)	(171)	(378)	(535)
Total other income (expense)	49	(165)	(28)	(970)
Net loss	$ (16,834)	$ (12,642)	$ (51,232)	$ (37,194)
Other comprehensive income (loss):				
Unrealized (loss) gain on investments	(28)	—	27	—
Comprehensive loss	$ (16,862)	$ (12,642)	$ (51,205)	$ (37,194)
Reconciliation of net loss applicable to common stockholders:				
Net loss	$ (16,834)	$ (12,642)	$ (51,232)	$ (37,194)
Convertible preferred stock dividends	—	—	—	(3,153)
Net loss applicable to common stockholders	$ (16,834)	$ (12,642)	$ (51,232)	$ (40,347)
Net loss per share applicable to common stockholders — basic and diluted	$ (0.62)	$ (0.47)	$ (1.89)	$ (2.64)
Weighted-average number of common shares used in net loss per share applicable to common stockholders — basic and diluted	27,251	26,835	27,170	15,298

Blueprint Medicines Corporation
Condensed Consolidated Statements of Cash Flows
(in thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2015
Operating activities		
Net loss	$ (51,232)	$ (37,194)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	1,189	615
Noncash interest expense	59	84
Change in fair value of warrant liability	—	445
Stock-based compensation	4,494	3,985
Accretion of premiums and discounts on investments	204	—
Changes in assets and liabilities:		
Unbilled accounts receivable	(41)	(2,470)
Prepaid expenses and other current assets	710	(1,044)
Other assets	(5)	(555)
Accounts payable	(373)	684
Accrued expenses	1,927	1,544
Deferred revenue	37,707	14,861
Deferred rent	(355)	415
Net cash used in operating activities	(5,716)	(18,630)
Investing activities		
Purchases of property and equipment	(2,336)	(1,129)
Restricted cash	119	(1,266)
Purchases of investments	(105,318)	—
Maturities of investments	27,000	—
Net cash used in investing activities	(80,535)	(2,395)
Financing activities		
Principal payments on loan payable	(2,500)	(1,250)
Proceeds from IPO, net of commissions and underwriting discounts	—	156,815
Payment of offering costs	—	(2,046)
Proceeds from issuance of common stock, net of repurchases	447	46
Net cash (used in) provided by financing activities	(2,053)	153,565
Net (decrease) increase in cash and cash equivalents	(88,304)	132,540
Cash and cash equivalents at beginning of period	162,707	47,240
Cash and cash equivalents at end of period	$ 74,403	$ 179,780
Supplemental cash flow information		
Cash paid for interest	$ 254	$ 347
Property and equipment purchases incurred but unpaid at period end	$ 15	$ 2,808
Conversion of convertible preferred stock into common stock	$ —	$ 114,808
Reclassification of warrant liability to additional paid-in-capital	$ —	$ 810

Blueprint Medicines Corporation
Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Nature of Business

Blueprint Medicines Corporation (the Company), a Delaware corporation incorporated on October 14, 2008, is a biopharmaceutical company focused on improving the lives of patients with genomically defined diseases driven by abnormal kinase activation. The Company's approach is to systematically and reproducibly identify kinases that are drivers of diseases in genomically defined patient populations and to craft drug candidates with therapeutic windows that may provide significant and durable clinical response to patients without adequate treatment options.

The Company is devoting substantially all of its efforts to research and development, initial market development, and raising capital. The Company is subject to a number of risks similar to those of other early stage companies, including dependence on key individuals; establishing safety and efficacy in clinical trials for its drug candidates; the need to develop commercially viable drug candidates; competition from other companies, many of which are larger and better capitalized; and the need to obtain adequate additional financing to fund the development of its drug candidates. If the Company is unable to raise capital when needed or on attractive terms, it would be forced to delay, reduce, eliminate or out-license certain of its research and development programs or future commercialization efforts.

On May 5, 2015, the Company completed an initial public offering (IPO) of its common stock, which resulted in the sale of 9,367,708 shares of its common stock, including 1,221,874 shares of common stock sold by the Company pursuant to the exercise in full by the underwriters of their option to purchase additional shares in connection with the offering, at a price to the public of $18.00 per share. The Company received net proceeds of $154.8 million after deducting underwriting discounts and commissions and offering costs paid by the Company.

2. Summary of Significant Accounting Policies and Recent Accounting Pronouncements

Basis of Presentation

The unaudited interim condensed consolidated financial statements of the Company included herein have been prepared in accordance with accounting principles generally accepted in the United States (GAAP) as found in the Accounting Standards Codification (ASC), Accounting Standards Update (ASU) of the Financial Accounting Standards Board (FASB) and the rules and regulations of the SEC. Certain information and footnote disclosures normally included in financial statements prepared in accordance with GAAP have been condensed or omitted from this report, as is permitted by such rules and regulations. Accordingly, these financial statements should be read in conjunction with the financial statements as of and for the year ended December 31, 2015 and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2015, filed with the Securities and Exchange Commission on March 11, 2016.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited financial statements and include the accounts of the Company and its wholly owned subsidiary, Blueprint Medicines Security Corporation, which is a Massachusetts subsidiary created to buy, sell, and hold securities. All intercompany transactions and balances have been eliminated. In the opinion of the Company's management, the accompanying unaudited interim condensed consolidated financial statements contain all adjustments which are necessary to present fairly the Company's financial position as of September 30, 2016 and the results of its operations for the three and nine months ended September 30, 2016 and 2015 and cash flows for the nine months ended September 30, 2016 and 2015. Such adjustments are of a normal and recurring nature. The results for the three and nine months ended September 30, 2016 are not necessarily indicative of the results for the year ending December 31, 2016, or for any future period.

In connection with preparing for its IPO, the Company effected a 1-for-5.5 reverse stock split of the Company's common stock. The reverse stock split became effective on April 10, 2015. All share and per share amounts in the financial statements and notes thereto have been retroactively adjusted for all periods presented to give effect to this reverse stock split, including reclassifying an amount equal to the reduction in par value of common stock to additional paid-in capital. Upon the closing of the IPO in May 2015, all of the Company's outstanding convertible preferred stock

automatically converted into 15,467,479 shares of common stock, and warrants exercisable for convertible preferred stock automatically converted into warrants exercisable for 42,423 shares of common stock. The significant increase in shares outstanding in the nine months ended September 30, 2016 impacted the year-over-year comparability of the Company's net loss per share calculations.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires the Company's management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates. Management considers many factors in selecting appropriate financial accounting policies and in developing the estimates and assumptions that are used in the preparation of the financial statements. Management must apply significant judgment in this process. Management's estimation process often may yield a range of potentially reasonable estimates and management must select an amount that falls within that range of reasonable estimates. Estimates are used in the following areas, among others: stock-based compensation expense, including estimating the fair value of the Company's common stock prior to the IPO; revenue recognition; the valuation of liability-classified warrants prior to the IPO; accrued expenses; and income taxes.

Significant Accounting Policies

The Company's critical accounting policies are those policies that require the most significant judgments and estimates in the preparation of our financial statements. Management has determined that the Company's most critical accounting policies are those relating to revenue recognition, accrued research and development expenses, available-for-sale investments and stock-based compensation.

Available-for-Sale Investments

The Company classifies marketable securities with a remaining maturity when purchased of greater than three months as available-for-sale. Marketable securities with a remaining maturity date greater than one year are classified as non-current. Available-for-sale securities are maintained by an investment manager and may consist of U.S. Treasury securities and U.S. government agency securities. Available-for-sale securities are carried at fair value with the unrealized gains and losses included in other comprehensive income (loss) as a component of stockholders' equity until realized. Any premium or discount arising at purchase is amortized and/or accreted to interest income and/or expense over the life of the instrument. Realized gains and losses are determined using the specific identification method and are included in other income (expense). If any adjustment to fair value reflects a decline in value of the investment, the Company considers all available evidence to evaluate the extent to which the decline is "other-than-temporary" and, if so, mark the investment to market through a charge to the Company's statement of operations and comprehensive loss.

There have been no significant changes to the Company's critical accounting policies discussed in its Annual Report on Form 10-K for the year ended December 31, 2015 related to revenue recognition, accrued research and development expenses and stock-based compensation.

Recent Accounting Pronouncements

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (ASU 2014-09), which supersedes the revenue recognition requirements in ASC 605-25, *Multiple-Element Arrangements* and most industry-specific guidance. The new standard requires that an entity recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The update also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. This new guidance will be effective for annual reporting periods (including interim reporting periods within those years) beginning January 1, 2018. Early adoption in 2017 is permitted. Companies have the option of applying this new guidance retrospectively to each prior reporting period presented or retrospectively with the cumulative effect of initially applying this update recognized at the date of initial application. The Company is in the process of evaluating the new guidance and determining the expected effects of the adoption of this standard on its consolidated financial statements.

In August 2014, the FASB issued ASU No. 2014-15, *Presentation of Financial Statements—Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern*. This new standard is intended to define management's responsibility to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern within one year of the date of issuance of the entity's financial statements and to provide related footnote disclosures. This new accounting guidance is effective for annual reporting periods ending after December 15, 2016, and for interim periods within annual periods beginning after December 15, 2016. Early adoption is permitted. The new accounting standard will impact the disclosure in the Company's consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, *Compensation – Stock Compensation*, which amends ASC Topic 718, *Compensation – Stock Compensation*. The new standard identifies areas for simplification involving several aspects of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, an option to recognize gross stock compensation expense with actual forfeitures recognized as they occur, as well as certain classifications on the statement of cash flows. The amendments are effective for annual reporting periods (including interim reporting periods within those years) beginning after December 15, 2016. Early adoption is permitted. A company that elects early adoption must adopt all of the amendments in the same period. The Company is currently evaluating the potential impact that ASU 2016-09 may have on the Company's consolidated financial statements.

In 2016, the FASB issued amended guidance applicable to leases that will be effective for annual reporting periods (including interim reporting periods within those years) beginning after December 15, 2018. Early adoption is permitted. This update requires a company 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 the Company's consolidated financial statements.

3. *Cash Equivalents and Investments*

Cash equivalents are highly liquid investments that are readily convertible into cash with original maturities of three months or less when purchased. Investments consist of securities with original maturities greater than 90 days when purchased. The Company classifies these investments as available-for-sale and records them at fair value in the accompanying condensed consolidated balance sheets. Unrealized gains or losses are included in accumulated other comprehensive income (loss). Premiums or discounts from par value are amortized to investment income over the life of the underlying investment.

Cash equivalents and investments, available-for-sale, consisted of the following at September 30, 2016 and December 31, 2015 (in thousands):

September 30, 2016	**Average Maturity**	**Amortized Cost**	**Unrealized Gain**	**Unrealized Losses**	**Fair Value**
Cash equivalents:					
Money market funds		$ 74,403	$ —	$ —	$ 74,403
Investments, available-for-sale:					
U.S. treasury obligations	268 Days	78,114	28	(1)	78,141
Total		$ 152,517	$ 28	$ (1)	$ 152,544

December 31, 2015	**Average Maturity**	**Amortized Cost**	**Unrealized Gain**	**Unrealized Losses**	**Fair Value**
Cash equivalents:					
Money market funds		$ 162,707	$ —	$ —	$ 162,707

Although available to be sold to meet operating needs or otherwise, securities are generally held through maturity. The cost of securities sold is determined based on the specific identification method for purposes of recording realized gains and losses. During the three and nine months ended September 30, 2016, there were no realized gains or losses on sales of investments, and no investments were adjusted for other than temporary declines in fair value.

4. *Fair Value of Financial Instruments*

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs that reflect the Company's own assumptions about the assumptions market participants would use in pricing the asset or liability. Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

Financial instruments measured at fair value as of September 30, 2016 are classified below based on the fair value hierarchy described above:

Description	September 30, 2016	Active Markets (Level 1)	Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Financial Assets				
Cash equivalents:				
Money market funds	$ 74,403	$ 74,403	$ —	$ —
Investments, available-for-sale:				
U.S Treasury obligations	78,141	78,141	—	—
Total	$ 152,544	$ 152,544	$ —	$ —

Financial instruments measured at fair value as of December 31, 2015 are classified below based on the fair value hierarchy described above:

Description	December 31, 2015	Active Markets (Level 1)	Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Financial Assets				
Cash equivalents:				
Money market funds	$ 162,707	$ 162,707	$ —	$ —

The fair value of the Company's term loan payable is determined using current applicable rates for similar instruments as of the balance sheet date. The carrying value of the Company's term loan payable approximates fair value because the Company's interest rate yield approximates current market rates. The Company's term loan payable is a Level 3 liability within the fair value hierarchy.

5. Restricted Cash

At September 30, 2016 and December 31, 2015, $1.3 million and $1.4 million, respectively, of the Company's cash is restricted by a bank. As of December 31, 2015 and September 30, 2016, $1.3 million of restricted cash was included in long-term assets on the Company's balance sheet related to a security deposit for the lease agreement for the Company's corporate headquarters. The balance as of December 31, 2015 also included $0.1 million of restricted cash in current assets as collateral for a stand-by letter of credit issued by the Company to its landlord in connection with the lease of the Company's corporate headquarters, which ended in October 2015.

6. Collaborations

Roche

In March 2016, the Company entered into a collaboration and license agreement (as amended, Roche agreement) with F. Hoffmann-La Roche Ltd and Hoffmann-La Roche Inc. (collectively, Roche) for the discovery, development and commercialization of up to five small molecule therapeutics targeting kinases believed to be important in cancer immunotherapy, as single products or possibly in combination with other therapeutics. The parties have identified targets for three of the collaboration programs, two of which began in the first half of 2016 and the third of which is expected to begin in 2016, and the parties have agreed to work together to use the Company's novel target discovery engine and proprietary compound library to select targets for up to two additional collaboration programs.

Under the Roche agreement, Roche is granted up to five option rights to obtain an exclusive license to exploit products derived from the collaboration programs in the field of cancer immunotherapy. Such option rights are triggered upon the achievement of Phase 1 proof-of-concept. For up to three of the five collaboration programs, if Roche exercises its option, Roche will receive worldwide, exclusive commercialization rights for the licensed products. For up to two of the five collaboration programs, if Roche exercises its option, the Company will retain commercialization rights in the United States for the licensed products, and Roche will receive commercialization rights outside of the United States for the licensed products. The Company will also retain worldwide rights to any products for which Roche elects not to exercise its applicable option.

Prior to Roche's exercise of an option, the Company will have the lead responsibility for drug discovery and pre-clinical development of all collaboration programs. In addition, the Company will have the lead responsibility for the conduct of all Phase 1 clinical trials other than those Phase 1 clinical trials for any product in combination with Roche's portfolio of therapeutics, for which Roche will have the right to lead the conduct of such Phase 1 clinical trials. Pursuant to the Roche agreement, the parties will share the costs of Phase 1 development for each collaboration program. In addition, Roche will be responsible for post-Phase 1 development costs for each licensed product for which it retains global commercialization rights, and the Company and Roche will share post-Phase 1 development costs for each licensed product for which the Company retains commercialization rights in the United States.

Subject to the terms of the Roche agreement, the Company received an upfront cash payment of $45.0 million and will be eligible to receive up to approximately $965.0 million in contingent option fees and milestone payments related to specified research, pre-clinical, clinical, regulatory and sales-based milestones. Of the total contingent payments, up to approximately $215.0 million are for option fees and milestone payments for research, pre-clinical and clinical development events prior to licensing across all five potential collaboration programs, including contingent milestone payments for initiation of each of the collaboration programs for which the parties will work together to select targets (pre-option exercise milestones). In addition, for any licensed product for which Roche retains worldwide commercialization rights, the Company will be eligible to receive tiered royalties ranging from low double-digits to high-teens on future net sales of the licensed product. For any licensed product for which the Company retains commercialization rights in the United States, the Company and Roche will be eligible to receive tiered royalties ranging from mid-single-digits to low double-digits on future net sales in the other party's respective territories in which it commercializes the licensed product. The upfront cash payment and any payments for milestones, option fees and royalties are non-refundable, non-creditable and not subject to set-off.

The Roche agreement will continue until the date when no royalty or other payment obligations are or will become due, unless earlier terminated in accordance with the terms of the Roche agreement. Prior to its exercise of its first option, Roche may terminate the Roche agreement at will, in whole or on a collaboration target-by-collaboration target basis, upon 120 days' prior written notice to the Company. Following its exercise of an option, Roche may terminate the Roche agreement at will, in whole, on a collaboration target-by-collaboration target basis, on a collaboration program-by-collaboration program basis or, if a licensed product has been commercially sold, on a country-by-country basis, (i) upon 120 days' prior written notice if a licensed product has not been commercially sold or (ii) upon 180 days' prior written notice if a licensed product has been commercially sold. Either party may terminate the Roche agreement for the other party's uncured material breach or insolvency and in certain other circumstances agreed to by the parties. In certain termination circumstances, the Company is entitled to retain specified licenses to be able to continue to exploit the licensed products.

The Company determined that there were five deliverables under the Roche agreement: (i) a non-transferable, sub-licensable and non-exclusive license to use the Company's intellectual property and collaboration compounds to conduct research activities;(ii) conducting research and development activities through Phase 1 clinical trials under the research plan; (iii) providing pre-clinical and clinical supply of collaboration compounds; (iv) participation on a joint research committee (JRC) and joint development committee (JDC); and (v) regulatory responsibilities under Phase 1 clinical trials.

The Company determined that the license did not have value to Roche on a stand-alone basis due to the specialized nature of the research activities to be provided by the Company that are not available in the marketplace and the fact that the license is to perform research and development only. Therefore, the license has limited value without the performance of the research and development activities and is not separable. The pre-clinical and clinical supply activities are integral to the performance of the research and development activities and can only be used for the performance of such activities, and the regulatory responsibilities are dependent on the research and development activities. The Company determined that the best estimate for the selling price of the JRC and JDC participation was inconsequential. Accordingly, the Company combined the license, pre-clinical and clinical supply, JRC and JDC participation and regulatory responsibilities deliverables with the research and development activities, the last item to be delivered in the arrangement, as one unit of accounting. The Company is recognizing the total allocable arrangement consideration consisting of the upfront payment of $45.0 million as revenue on a straight-line basis over the Company's best estimate of the period it expects to perform research and development activities. The Company expects the services to be delivered ratably.

The Company evaluated whether the option fees that may be received in connection with the Roche agreement are substantive. The Company concluded that the option fees were substantive due to the uncertainty around whether the goals of the collaboration will be achieved, and therefore the options are not a deliverable in the current arrangement. If Roche elects to exercise the options, the exercises and related contingent deliverables would be accounted for as a separate arrangement.

The Company evaluated whether the milestones that may be received in connection with the Roche agreement are substantive milestones. Pre-option exercise milestones that are expected to be achieved as a result of the Company's efforts during the performance of the research and development activities are considered substantive and are recognized as revenue upon the achievement of the milestone, assuming all other revenue recognition criteria are met. The development event milestones are not considered substantive because the Company does not contribute effort to the achievement of such milestones as they are expected to be achieved after the performance of the research and development activities. Consideration received with respect to these milestones will be added to the total arrangement consideration that has been allocated to the identified units of accounting. As a result, that amount is recognized as revenue ratably over the period starting from the effective date of the agreement to the date that the Company will complete all of its obligations, with a cumulative catch-up from the effective date through the date of achievement of the milestone. If the consideration is received after the completion of all of the Company's obligations, the amount will be recognized as revenue immediately.

During the three months and nine months ended September 30, 2016, the Company recognized revenue under the Roche agreement of $1.4 million and $3.0 million, respectively, which represents a portion of the $45.0 million upfront payment.

Alexion

In March 2015, the Company entered into a research, development and commercialization agreement (Alexion agreement) with Alexion Pharma Holding (Alexion) to research, develop and commercialize drug candidates for an undisclosed activated kinase target, which is the cause of a rare genetic disease. Under the terms of the Alexion agreement, the Company is responsible for research and pre-clinical development activities related to drug candidates and Alexion is responsible for all clinical development, manufacturing and commercialization activities related to drug candidates.

Alexion is responsible for funding 100% of the Company's research and development costs incurred under the research plan, including pass-through costs and a negotiated yearly rate per full-time equivalent for its employees' time and their associated overhead expenses. The Company received a $15.0 million non-refundable upfront payment in

March 2015 upon execution of the Alexion agreement and is eligible to receive over $250.0 million in payments upon the successful achievement of pre-specified pre-clinical, clinical, regulatory and commercial milestones as follows: (i) up to $6.0 million in pre-clinical milestone payments for the first licensed product, (ii) up to $83.0 million and $61.5 million in development milestone payments for the first and second licensed products, respectively, and (iii) up to $51.0 million in commercial milestone payments for each of the first and second licensed products. Alexion will pay the Company tiered royalties, ranging from mid-single to low-double digit percentages, on a country-by-country and licensed-product-by-licensed product basis, on worldwide net product sales of licensed products. The royalty term for each licensed product in each country is the period commencing with first commercial sale of such licensed product in such country and ending on the later of (i) the expiration of the last-to-expire valid claim of specified patents covering such licensed product, (ii) the expiration of the applicable regulatory exclusivity period, and (iii) 10 or 15 years from specified commercial sales. There are no refund provisions in the Alexion agreement.

Alexion has the right to terminate the Alexion agreement if the Company undergoes a change of control or becomes an affiliate of a biotechnology or pharmaceutical company, and may terminate the Alexion agreement at will upon 90 days prior written notice. The Company and Alexion have the right to terminate the Alexion agreement in the event of the other party’s uncured breach or insolvency, and in certain other circumstances agreed to by the parties.

The Company determined that there were three deliverables under the Alexion agreement: (i) an exclusive license to research, develop, manufacture and commercialize the licensed products and the compounds in the field in the territory, (ii) conducting research and development activities under the research plan and (iii) participation on a joint steering committee (JSC) and joint project team (JPT).

The Company determined that the license did not have value to Alexion on a stand-alone basis due to the specialized nature of the research services to be provided by the Company that are not available in the marketplace. Therefore, the deliverables are not separable and, accordingly, the license, undelivered research and development activities and JSC and JPT participation are a single unit of accounting. When multiple deliverables are accounted for as a single unit of accounting, the Company bases its revenue recognition model on the final deliverable. Under the Alexion agreement, the last deliverable to be completed is its research and development activities and participation on the JSC and JPT, which are expected to be delivered over the same performance period. The Company is utilizing a proportional performance model to recognize revenue under the Alexion agreement.

The Company evaluated whether the milestones that may be received in connection with the Alexion agreement are substantive or non-substantive milestones. The Company concluded that the first pre-clinical milestone payment in the Alexion agreement is non-substantive due to the certainty at the date the arrangement was entered into that the event will be achieved. In the second quarter of 2015, the Company achieved the first pre-clinical milestone under the Alexion agreement and received a $1.75 million payment from Alexion. The Company is recognizing revenues from the related milestone payment over the period of performance.

The remaining non-refundable pre-clinical milestones that are expected to be achieved as a result of the Company's efforts during the period of substantial involvement are considered substantive and are recognized as revenue upon the achievement of the milestone, assuming all other revenue recognition criteria are met. The Company has recognized and received an aggregate of $2.0 million in substantive milestones through September 30, 2016. Milestones that are expected to be achieved after the period of substantial involvement are not considered substantive because the Company does not contribute effort to the achievement of such milestones. These milestones are recognized as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met, as there are no undelivered elements remaining and no continuing performance obligations.

During the three months ended September 30, 2016, the Company recognized revenue under the Alexion agreement of $4.8 million, which represents $3.5 million of reimbursable research and development costs, a $1.0 million milestone payment that was recognized upon achievement, as well as a portion of the $15.0 million upfront payment and the $1.75 million non-substantive milestone payment previously received. During the nine months ended September 30, 2016, the Company recognized revenue under the Alexion agreement of $17.0 million, which represents $11.0 million of reimbursable research and development costs, $1.75 million of milestone payments that were recognized upon achievement, as well as a portion of the $15.0 million upfront payment and the $1.75 million non-substantive milestone payment previously received. During the nine months ended September 30, 2016, the Company received $10.7 million related to reimbursable research and development costs under the Alexion agreement. As of September 30, 2016, the

Company has recorded unbilled accounts receivable of $3.5 million related to reimbursable research and development costs under the Alexion agreement for activities performed during the third quarter of 2016.

7. Term Loan

In May 2013, the Company entered into a loan and security agreement with Silicon Valley Bank (the 2013 Term Loan), which provided for up to $5.0 million in funding, to be made available in three tranches. Loan advances accrue interest at a fixed rate of 2% above the prime rate. In June 2013, the Company drew the first loan advance of $1.0 million under the 2013 Term Loan and was required to make interest-only payments until April 1, 2014, and consecutive monthly payments of principal, plus accrued interest, over the remaining term through March 2017. In September 2013, the Company drew the second loan advance of $2.0 million under the 2013 Term Loan and was required to make interest-only payments until April 1, 2014, and consecutive monthly payments of principal, plus accrued interest, over the remaining term through March 2017. In June 2014, the Company drew the remaining $2.0 million advance under the 2013 Term Loan and was required to make interest-only payments until January 1, 2015, and consecutive monthly payments of principal, plus accrued interest, over the remaining term through December 2017. In November 2014, the Company amended the 2013 Term Loan to allow the Company to borrow an additional $5.0 million (the 2014 Term Loan). The Company accounted for the amendment as a modification to the existing 2013 Term Loan. The Company immediately drew the additional $5.0 million under the 2014 Term Loan and was required to make interest-only payments until December 1, 2015, and consecutive monthly payments of principal, plus accrued interest, over the remaining term through November 2018. The Company is required to pay a fee of 4% of the total loan advances at the end of the term of each of the 2013 Term Loan and the 2014 Term Loan. The fee is being accreted to interest expense over the term of the 2013 Term Loan and the 2014 Term Loan. In the event of prepayment, the Company is obligated to pay 1% to 2% of the amount of the outstanding principal depending upon the timing of the prepayment.

The 2013 Term Loan and 2014 Term Loan are collateralized by a blanket lien on all corporate assets, excluding intellectual property, and by a negative pledge of the Company’s intellectual property. The 2013 Term Loan and 2014 Term Loan contain customary default provisions that include material adverse events, as defined therein. The Company has determined that the risk of subjective acceleration under the material adverse events clause is remote and therefore has classified the outstanding principal in current and long-term liabilities based on scheduled principal payments.

The Company assessed all terms and features of the 2013 Term Loan and the 2014 Term Loan in order to identify any potential embedded features that would require bifurcation. As part of this analysis, the Company assessed the economic characteristics and risks of the term loan, including put and call features. The Company determined that all features of each of the 2013 Term Loan and the 2014 Term Loan are clearly and closely associated with a debt host and do not require bifurcation as a derivative liability, or the fair value of the feature is immaterial to the Company’s financial statements. The Company will continue to reassess the features on a quarterly basis to determine if they require separate accounting.

Future minimum payments, which include principal and interest due under each of the 2013 Term Loan and the 2014 Term Loan, are $0.9 million, in the aggregate, for the remainder of 2016 and $4.3 million, in the aggregate, thereafter.

8. Warrants

In connection with the 2013 Term Loan, the Company issued a warrant to Silicon Valley Bank to purchase 150,000 shares of Series A convertible preferred stock at an exercise price of $1.00 per share (the Series A Warrant). In connection with the 2014 Term Loan, the Company issued an additional warrant to Silicon Valley Bank to purchase 83,333 shares of Series B convertible preferred stock at an exercise price of $1.20 per share (the Series B Warrant). Both warrants were exercisable immediately and have a ten-year life.

The Company initially valued the Series A Warrant and the Series B Warrant at issuance and at the balance sheet dates using the Black-Scholes option pricing model. The significant assumptions used in estimating the fair value of the warrants include the volatility of the stock underlying the warrant, risk-free interest rate, estimated fair value of the preferred stock underlying the warrant, and the estimated term of the warrant. The fair value of the preferred stock underlying the warrants was estimated using the implied value from the common stock valuations on those dates.

In accordance with ASC 480, the characteristics of these warrants and the rights and privileges of the underlying preferred stock resulted in the classification of these warrants as a liability, and they were re-measured to the-then current fair value at each balance sheet date through the completion of the IPO. Re-measurement gains or losses were recorded in other income (expense) in the condensed consolidated statements of operations and comprehensive loss. Changes in the fair value of the warrants represented a recurring measurement that was classified within Level 3 of the fair value hierarchy wherein fair value is estimated using significant unobservable inputs. The Company recorded $0.4 million of expense associated with the change in fair value of the warrants in the nine months ended September 30, 2015. Upon completion of the IPO, the Series A Warrant became exercisable for 27,272 shares of the common stock at an exercise price of $5.50 per share, and the Series B Warrant became exercisable for 15,151 shares of the common stock at an exercise price of $6.60 per share. On the date of the conversion of the warrants, the Company revalued the outstanding warrants using the Black-Scholes option pricing model and reclassified the fair value of the warrants of $0.8 million to additional paid-in capital.

On May 13, 2015, Silicon Valley Bank exercised the Series A Warrant and the Series B Warrant pursuant to the cashless exercise feature of the warrants. In connection with the exercise of the Series A Warrant under the 2013 Term Loan, the Company issued 21,281 shares of common stock to Silicon Valley Bank. Warrants to purchase 5,991 shares of common stock were cancelled as payment for the aggregate exercise price of the Series A Warrant to Silicon Valley Bank. In connection with the exercise of the Series B Warrant under the 2014 Term Loan, the Company issued 11,157 shares of common stock. Warrants to purchase 3,994 shares of common stock were cancelled as payment for the aggregate exercise price of the Series B Warrant.

The Company recorded a debt discount upon issuance of the warrants, which is being accreted as interest expense over the remaining term of the loan. The Company recorded interest expense related to the Series A Warrant and the Series B Warrant of less than $0.1 million in the three and nine months ended September 30, 2016 and 2015, respectively.

9. Stock Awards

2015 Stock Option and Incentive Plan

In 2015, the Company's board of directors and stockholders approved the 2015 Stock Option and Incentive Plan (the 2015 Plan), which replaced the Company's 2011 Stock Option and Grant Plan, as amended (the 2011 Plan). The 2015 Plan includes incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units, unrestricted stock, performance share awards and cash-based awards. The Company initially reserved a total of 1,460,084 shares of common stock for the issuance of awards under the 2015 Plan. The 2015 Plan provides that the number of shares reserved and available for issuance under the 2015 Plan will be cumulatively increased on January 1 of each calendar year by 4% of the number of shares of common stock issued and outstanding on the immediately preceding December 31 or such lesser amount as specified by the compensation committee of the board of directors. For the calendar year beginning January 1, 2016, the number of shares reserved for issuance under the 2015 Plan was increased by 1,087,842 shares. In addition, the total number of shares reserved for issuance is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization. At September 30, 2016, there were 1,773,024 shares available for future grant under the 2015 Plan.

Awards

Options and restricted stock awards granted by the Company generally vest ratably over four years, with a one-year cliff for new employee awards, and are exercisable from the date of grant for a period of ten years.

A summary of the Company's unvested restricted stock and related information follows:

	Shares	Weighted-Average Grant Date Fair Value
Unvested at December 31, 2015	130,495	$ 0.60
Vested	(115,271)	0.58
Repurchased	(1,591)	0.55
Unvested at September 30, 2016	13,633	0.75

The total fair value of restricted stock that vested during the three months ended September 30, 2016 and 2015 was $1.0 million and $1.4 million, respectively. The total fair value of restricted stock that vested during the nine months ended September 30, 2016 and 2015 was $2.3 million and $3.5 million, respectively.

A summary of the Company's stock option activity and related information follows:

	Shares	Weighted-Average Exercise Price	Remaining Contractual Life (in Years)	Aggregate Intrinsic Value(2) (in thousands)
Outstanding at December 31, 2015	1,802,802	$ 5.88	8.76	$ 37,008
Granted	843,263	16.21		
Exercised	(94,168)	2.66		
Canceled	(94,637)	6.64		
Outstanding at September 30, 2016	2,457,260	$ 9.52	8.40	$ 49,593
Exercisable at September 30, 2016	779,807	$ 6.47	7.82	$ 18,115
Vested and expected to vest at September 30, 2016(1)	2,406,154	$ 9.46	8.39	$ 48,693

(1)Represents the number of vested options as of September 30, 2016, plus the number of unvested options expected to vest as of September 30, 2016 based on a forfeiture rate of 2.5%.

(2)Intrinsic value represents the amount by which the fair market value as of September 30, 2016 of the underlying common stock exceeds the exercise price of the option.

The fair value of stock options is estimated on the grant date using the Black-Scholes option-pricing model based on the following weighted average assumptions:

	Three Months Ended		Nine Months Ended	
	September 30, 2016	September 30, 2015	September 30, 2016	September 30, 2015
Risk-free interest rate	1.25 %	1.71 %	1.54 %	1.66 %
Expected dividend yield	— %	— %	— %	— %
Expected term (years)	6.1	6.0	6.0	6.0
Expected stock price volatility	74.50 %	81.85 %	76.46 %	85.59 %

The weighted-average grant date fair value of options granted in the three months ended September 30, 2016 and 2015 was $15.80 and $19.40 respectively. The total intrinsic value of options exercised in the three months ended September 30, 2016 and 2015 was $0.7 million and $4.2 million, respectively. The weighted-average grant date fair value of options granted in the nine months ended September 30, 2016 and 2015 was $10.76 and $8.22, respectively. The total intrinsic value of options exercised in the nine months ended September 30, 2016 and 2015 was $1.8 million and $4.7 million, respectively.

Total stock-based compensation expense recognized for all stock-based compensation awards in the condensed consolidated statements of operations and comprehensive loss is as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
Research and development	$ 628	$ 329	$ 1,911	$ 1,618
General and administrative	1,277	642	2,583	2,367
Total stock-based compensation expense	$ 1,905	$ 971	$ 4,494	$ 3,985

At September 30, 2016, the Company had $11.9 million of total unrecognized compensation cost related to non-vested stock awards, which is expected to be recognized over a weighted-average period of 2.39 years. Due to an operating loss, the Company does not record tax benefits associated with stock-based compensation or option exercises. Tax benefit will be recorded when realized.

2015 Employee Stock Purchase Plan

In 2015, the Company's board of directors and stockholders approved the 2015 Employee Stock Purchase Plan (the 2015 ESPP), which became effective upon the closing of the IPO in May 2015. The Company initially reserved a total of 243,347 shares of common stock for issuance under the 2015 ESPP. The 2015 ESPP provides that the number of shares reserved and available for issuance under the 2015 ESPP will be cumulatively increased on January 1 of each calendar year by 1% of the number of shares of common stock issued and outstanding on the immediately preceding December 31 or such lesser amount as specified by the compensation committee of the board of directors. For the calendar year beginning January 1, 2016, the number of shares reserved for issuance under the 2015 ESPP was increased by 271,960 shares. The Company issued 11,426 shares under the ESPP during the nine months ended September 30, 2016.

10. Net Loss per Share

Basic net loss per share applicable to common stockholders is calculated by dividing net loss applicable to common stockholders by the weighted average shares outstanding during the period, without consideration for common stock equivalents. Net loss applicable to common stockholders is calculated by adjusting the net loss of the Company for cumulative preferred stock dividends. Diluted net loss per share applicable to common stockholders is calculated by adjusting weighted average shares outstanding for the dilutive effect of common stock equivalents outstanding for the period. For purposes of the dilutive net loss per share applicable to common stockholders calculation, convertible preferred stock, warrants, stock options, and unvested restricted stock are considered to be common stock equivalents but are excluded from the calculation of diluted net loss per share applicable to common stockholders, as their effect would be anti-dilutive; therefore, basic and diluted net loss per share applicable to common stockholders were the same for all periods presented as a result of the Company's net loss. The following common stock equivalents were excluded from the calculation of diluted net loss per share applicable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect.

	Nine Months Ended September 30,	
	2016	2015
Stock options	2,457,260	1,870,415
Unvested restricted stock	13,633	200,122
Total	2,470,893	2,070,537

The weighted average number of common shares used in net loss per share applicable to common stockholders on a basic and diluted basis were 27,250,662 and 26,835,927 for the three months ended September 30, 2016 and 2015, respectively, and 27,169,963 and 15,297,907 for the nine months ended September 30, 2016 and 2015, respectively.

11. Commitments

The Company leased its prior corporate headquarters under an operating lease that expired on November 1, 2015. On February 1, 2015, the Company's option to extend the term of the lease for an additional three-year period expired. The Company did not exercise its option to extend the term of the lease.

On February 12, 2015, the Company entered into a lease for approximately 38,500 rentable square feet of office and laboratory space in Cambridge, Massachusetts, which the Company gained control over on June 15, 2015, and occupancy commenced in October 2015. The lease ends on October 31, 2022. The Company has an option to extend the lease for five additional years. The lease has a total commitment of $17.8 million over the seven year term. The Company has agreed to pay an initial annual base rent of approximately $2.3 million, which rises periodically until it reaches approximately $2.8 million. The Company is recording rent expense on a straight-line basis through the end of the lease term. The Company has recorded deferred rent on the condensed consolidated balance sheet at September 30, 2016, accordingly. The lease provides the Company with an allowance for leasehold improvements of $4.3 million. The Company accounts for leasehold improvement incentives as a reduction to rent expense ratably over the lease term. The balance from the leasehold improvement incentives is included in lease incentive obligations on the balance sheets. The lease agreement required the Company to pay a security deposit of $1.3 million, which is recorded in restricted cash on the Company's balance sheet. For the three months ended September 30, 2016 and 2015, rent expense was $0.5 million

and $0.7 million, respectively. For the nine months ended September 30, 2016 and 2015, rent expense was $1.4 million and $1.2 million, respectively.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q and the audited consolidated financial statements and related notes thereto and management's discussion and analysis of financial condition and results of operations included in our Annual Report on Form 10-K for the year ended December 31, 2015, filed with the Securities and Exchange Commission, or the SEC, on March 11, 2016. Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report on Form 10-Q, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this Quarterly Report on Form 10-Q, our actual results or timing of certain events could differ materially from the results or timing described in, or implied by, these forward-looking statements.

Overview

We are a biopharmaceutical company focused on improving the lives of patients with genomically defined diseases driven by abnormal kinase activation. Our approach is to systematically and reproducibly identify kinases that are drivers of diseases in genomically defined patient populations and to craft drug candidates with therapeutic windows that may provide significant and durable clinical responses to patients without adequate treatment options. This integrated biology and chemistry approach enables us to drug known kinases that have been difficult to inhibit selectively and also identify, characterize and drug novel kinase targets. By focusing on diseases in genomically defined patient populations, we believe that we will have a more efficient development path with a greater likelihood of success. Leveraging our novel target discovery engine, we have developed a robust small molecule drug pipeline in cancer and a rare genetic disease. One of our lead drug candidates is BLU-285, which targets KIT Exon 17 mutants and PDGFRα D842V, abnormally active receptor tyrosine kinase mutants that are drivers of cancer and proliferative disorders. BLU-285 is currently being developed for patients with systemic mastocytosis, or SM, a myeloproliferative disorder of the mast cells, and defined subsets of patients with gastrointestinal stromal tumor, or GIST, the most common sarcoma, or tumor of bone or connective tissue, of the gastrointestinal tract. Our other lead drug candidate is BLU-554, which targets FGFR4, a kinase that is aberrantly activated and is a driver of disease in a defined subset of patients with hepatocellular carcinoma, or HCC, the most common type of liver cancer. Both drug candidates have demonstrated proof of concept in pre-clinical models.

In June 2015, July 2015 and September 2015, respectively, the U.S. Food and Drug Administration, or FDA, accepted our Investigational New Drug, or IND, applications for BLU-554 for the treatment of advanced HCC and cholangiocarcinoma, a rare form of cancer that affects the bile ducts, BLU-285 for the treatment of unresectable, treatment-resistant GIST and BLU-285 for the treatment of advanced SM. In June 2016, we amended the clinical trial protocol for BLU-554 to remove cholangiocarcinoma and expand the HCC cohort into three groups using central immunohistochemistry testing to stratify patients. We have initiated dose-escalation Phase 1 clinical trials for advanced HCC, unresectable, treatment-resistant GIST and advanced SM, and we are currently enrolling patients in each of these clinical trials. The dose escalation portion of each Phase 1 clinical trial is designed to enroll three patients in each cohort with the goal of establishing a maximum tolerated dose, or MTD, or a recommended dose if the MTD is not achieved. We plan to report preliminary data from our Phase 1 clinical trials for advanced HCC and unresectable, treatment-resistant GIST at the 28th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics in Munich, Germany on November 29, 2016 and December 1, 2016, respectively. We plan to report preliminary data from our Phase 1 clinical trial for advanced SM at the 2016 American Society of Hematology Annual Meeting in San Diego, CA on December 4, 2016. For each Phase 1 clinical trial, we anticipate that this preliminary data will include safety, pharmacokinetics and pharmacodynamic measures across a range of dose levels and any initial assessments of clinical activity that may be available. In September 2015, the FDA granted orphan drug designation to BLU-554 for the treatment of HCC, and in January 2016, the FDA granted orphan drug designation to BLU-285 for the treatment of GIST and SM. In October 2016, the FDA granted fast track designation to BLU-285 for the treatment of patients with unresectable or metastatic GIST that progressed following treatment with imatinib and a second tyrosine kinase inhibitor and for the treatment of patients with unresectable or metastatic GIST with the PDGFRα D842V mutation regardless of prior therapy.

We are also developing BLU-667, a drug candidate that targets RET, a receptor tyrosine kinase that can become abnormally activated by mutations or translocations, which occurs when a portion of the gene that encodes RET is joined

to part of another gene to encode a fusion protein, and RET resistant mutants that we predict will arise from treatment with first generation therapies. A fusion protein is encoded by a fusion gene, which is a gene in which a portion of one gene is joined to part of another gene. In the case of RET, a portion of the RET gene that encodes the kinase domain is joined to part of another gene. RET fusion proteins are always active and are thought to be drivers in several cancers. RET is a driver of disease in non-small cell lung cancer and cancers of the thyroid, and our research suggests that RET may be a driver of disease in subsets of colon and breast cancer. In pre-clinical studies, BLU6864, a structurally related compound that we identified in the course of developing BLU-667, induced tumor regression in disease models driven by the primary RET fusion and a predicted secondary on-target resistance mutation. We have initiated 28-day Good Laboratory Practice, or GLP, toxicology studies for BLU-667 with the goal of identifying the dose limiting toxicity and anticipated first-in-human dose for BLU-667. We plan to file an IND for BLU-667 by the end of 2016.

Leveraging our novel target discovery engine, we also have initiated efforts for a discovery program targeting protein kinase cAMP-activated catalytic subunit alpha fusions, or PRKACA fusions, for the treatment of fibrolamellar carcinoma, or FLC, a rare and distinct subtype of liver cancer that typically arises in young adults. Currently, there are no approved therapies for FLC, and surgery is the only available treatment option for some patients, but most patients inevitably progress. We estimate that more than 90% of patients with FLC harbor the PRKACA fusion, which is the only known recurrent genomic event in FLC and is considered to be the driver gene of the disease. In addition, we have identified predicted resistance mutations in the neurotrophic tyrosine receptor kinase, or NTRK, which is believed to be a driver of disease in a broad set of cancers, and are evaluating inhibitors of NTRK and predicted NTRK resistant mutants. We also have a rare genetic disease program that is the subject of our collaboration with Alexion Pharma Holding, or Alexion. In the first half of 2016, we began two of the cancer immunotherapy programs that are the subject of our collaboration with F. Hoffmann-La Roche Ltd and Hoffmann-La Roche Inc., which we collectively refer to as Roche, and we expect to begin a third program under the Roche collaboration in 2016.

Since inception, our operations have focused on organizing and staffing our company, business planning, raising capital, establishing our intellectual property, building our platform including our proprietary compound library and new target discovery engine, identifying kinase drug targets and potential drug candidates, producing drug substance and drug product material for use in pre-clinical studies and clinical trials, conducting pre-clinical studies, including GLP toxicology studies and commencing clinical development activities. We do not have any drugs approved for sale and have not generated any revenue from drug sales.

In May 2015, we completed an initial public offering, or IPO, of our common stock, which resulted in the sale of 9,367,708 shares, including 1,221,874 shares sold by us pursuant to the exercise in full by the underwriters of their option to purchase additional shares in connection with the offering, at a price to the public of $18.00 per share. We received gross proceeds of $168.6 million before deducting underwriting discounts and commissions and offering costs paid by us. To date, we have financed our operations primarily through our IPO, private placements of our convertible preferred stock and, to a lesser extent, the research, development and commercialization agreement, or Alexion agreement, that we entered into in March 2015 with Alexion, the collaboration and license agreement, or Roche agreement, that we entered into in March 2016 with Roche and a debt financing. Through September 30, 2016, we have received an aggregate of $357.5 million from such transactions, including $168.6 million in gross proceeds from our IPO, $115.1 million in gross proceeds from the issuance of convertible preferred stock, $18.8 million of upfront and milestone payments from Alexion, a $45.0 million upfront payment from Roche and $10.0 million in gross proceeds from the debt financing.

Since inception, we have incurred significant operating losses. Our net loss was $51.2 million and $37.2 million for the nine months ended September 30, 2016 and 2015, respectively, $52.8 million for the year ended December 31, 2015, $40.3 million for the year ended December 31, 2014 and $20.9 million for the year ended December 31, 2013. As of September 30, 2016, we had an accumulated deficit of $186.2 million. We expect to continue to incur significant expenses and operating losses over the next several years. We anticipate that our expenses will increase significantly in connection with our ongoing activities, particularly as we:

- continue the planned clinical development activities for our lead drug candidates, BLU-285 and BLU-554;
- continue IND-enabling activities and commence the planned clinical development activities for BLU-667;

- continue to produce drug substance and drug product material for use in pre-clinical studies and clinical trials;
- continue to discover, validate and develop additional drug candidates;
- conduct research and development activities under our collaborations with Alexion and Roche;
- conduct development and commercialization activities for companion diagnostics, including our companion diagnostic with Ventana Medical Systems, Inc., or Ventana, for BLU-554 and our companion diagnostic with QIAGEN Manchester Limited, or Qiagen, for BLU-285;
- maintain, expand and protect our intellectual property portfolio;
- hire additional research, development and business personnel; and
- incur additional costs associated with operating as a public company.

Collaborations and Partnerships

Alexion

In March 2015, we entered into the Alexion agreement to research, develop and commercialize drug candidates for an undisclosed activated kinase target, which is the cause of a rare genetic disease. Under the terms of this agreement, we are responsible for research and pre-clinical development activities related to drug candidates and Alexion is responsible for all clinical development, manufacturing and commercialization activities related to drug candidates.

Alexion is responsible for funding 100% of our research and development costs incurred under the research plan, including pass-through costs and a negotiated yearly rate per full-time equivalent for our employees' time and their associated overhead expenses. We received a $15.0 million non-refundable upfront payment in March 2015 upon execution of the Alexion agreement and are eligible to receive over $250.0 million in payments upon the successful achievement of pre-specified pre-clinical, clinical, regulatory and commercial milestones as follows: (i) up to $6.0 million in pre-clinical milestone payments for the first licensed product, (ii) up to $83.0 million and $61.5 million in development milestone payments for the first and second licensed products, respectively, and (iii) up to $51.0 million in commercial milestone payments for each of the first and second licensed products. We have recognized and received an aggregate of $3.75 million in milestone payments from Alexion through September 30, 2016. Alexion will pay us tiered royalties, ranging from mid-single to low-double digit percentages, on a country-by-country and licensed-product-by-licensed-product basis, on worldwide net product sales of licensed products. The royalty term for each licensed product in each country is the period commencing with first commercial sale of such licensed product in such country and ending on the later of (i) the expiration of the last-to-expire valid claim of specified patents covering such licensed product, (ii) the expiration of the applicable regulatory exclusivity period, and (iii) 10 or 15 years from specified commercial sales.

Alexion has the right to terminate the Alexion agreement if we undergo a change of control or become an affiliate of a biotechnology or pharmaceutical company, and may terminate the Alexion agreement at will upon 90 days' prior written notice. We and Alexion have the right to terminate the Alexion agreement in the event of the other party's uncured breach or insolvency, and in certain other circumstances agreed to by the parties.

During the three months ended September 30, 2016, we recognized revenue under the Alexion agreement of $4.8 million, which represents $3.5 million of reimbursable research and development costs, a $1.0 million milestone payment which was recognized upon achievement, as well as a portion of the $15.0 million upfront payment and the $1.75 million non-substantive milestone payment previously received. During the nine months ended September 30, 2016, we recognized revenue under the Alexion agreement of $17.0 million, which represents $11.0 million of reimbursable research and development costs, $1.75 million of milestone payments which were recognized upon achievement, as well as a portion of the $15.0 million upfront payment and the $1.75 million non-substantive milestone payment previously received. During the nine months ended September 30, 2016, we received $10.7 million related to reimbursable research and development costs under the Alexion agreement. As of September 30, 2016, we have

recorded unbilled accounts receivable of $3.5 million related to reimbursable research and development costs under the Alexion agreement for activities performed during the third quarter of 2016.

Roche

In March 2016, we entered into the Roche agreement pursuant to which we and Roche have agreed to collaborate on the discovery, development and commercialization of up to five small molecule therapeutics targeting kinases believed to be important in cancer immunotherapy, as single products or possibly in combination with other therapeutics. The parties have identified targets for three of the collaboration programs, two of which began in the first half of 2016 and the third of which is expected to begin in 2016, and the parties have agreed to work together to use our novel target discovery engine and proprietary compound library to select targets for up to two additional collaboration programs.

Under the Roche agreement, Roche is granted up to five option rights to obtain an exclusive license to exploit products derived from the collaboration programs, or licensed products, in the field of cancer immunotherapy. Such option rights are triggered upon the achievement of Phase 1 proof-of-concept. For up to three of the five collaboration programs, if Roche exercises its option, Roche will receive worldwide, exclusive commercialization rights for the licensed products. For up to two of the five collaboration programs, if Roche exercises its option, we will retain commercialization rights in the United States for the licensed products, and Roche will receive commercialization rights outside of the United States for the licensed products. We will also retain worldwide rights to any products for which Roche elects not to exercise its applicable option. Prior to Roche's exercise of an option, we will have the lead responsibility for drug discovery and pre-clinical development of all collaboration programs. In addition, we will have the lead responsibility for the conduct of all Phase 1 clinical trials other than those Phase 1 clinical trials for any product in combination with Roche's portfolio of therapeutics, for which Roche will have the right to lead the conduct of such Phase 1 clinical trials. Pursuant to the Roche agreement, the parties will share the costs of Phase 1 development for each collaboration program. In addition, Roche will be responsible for post-Phase 1 development costs for each licensed product for which it retains global commercialization rights, and we and Roche will share post-Phase 1 development costs for each licensed product for which we retain commercialization rights in the United States.

We received an upfront cash payment of $45.0 million in March 2016 upon execution of the Roche agreement, and subject to the terms of the Roche agreement, we will be eligible to receive up to approximately $965.0 million in contingent option fees and milestone payments related to specified research, pre-clinical, clinical, regulatory and sales-based milestones. Of the total contingent payments, up to approximately $215.0 million are for option fees and milestone payments for research, pre-clinical and clinical development events prior to licensing across all five potential collaboration programs, including contingent milestone payments for initiation of each of the collaboration programs for which the parties will work together to select targets. In addition, for any licensed product for which Roche retains worldwide commercialization rights, we will be eligible to receive tiered royalties ranging from low double-digits to high-teens on future net sales of the licensed product. For any licensed product for which we retain commercialization rights in the United States, we and Roche will be eligible to receive tiered royalties ranging from mid-single-digits to low double-digits on future net sales in the other party's respective territories in which it commercializes the licensed product. The upfront cash payment and any payments for milestones, option fees and royalties are non-refundable, non-creditable and not subject to set-off.

Under the Roche agreement, each party has granted the other party specified intellectual property licenses to enable the other party to perform its obligations and exercise its rights under the Roche agreement, including license grants to enable each party to conduct research, development and commercialization activities pursuant to the terms of the Roche agreement. Following Roche's exercise of its option with respect to the collaboration programs for which it will obtain worldwide rights, we will grant Roche an exclusive license under our intellectual property to develop and commercialize the licensed products generated through such collaboration program. Similarly, Roche will grant us an exclusive license under Roche's intellectual property to develop and commercialize licensed products in the United States for the collaboration programs on which we will retain rights in the United States, with Roche receiving a license under our intellectual property to develop and commercialize such licensed products outside of the United States.

Subject to the terms and conditions of the Roche agreement, we have agreed to work exclusively with Roche with respect to each collaboration target, and we have agreed to work exclusively within the field of cancer immunotherapy for a period of up to 30 months after the execution of the Roche agreement. In addition, subject to

specified exceptions, Roche has a right of first negotiation in the event that we desire to grant any third party rights to develop or commercialize a licensed product under either of the collaboration programs for which we will retain commercialization rights in the United States. Roche's right of first negotiation will not apply in connection with a change of control of us, an assignment by us in accordance with the terms of the Roche agreement or certain agreements with contract research organizations, contract manufacturing organizations, academic institutions, not-for-profit third parties or distributors.

The Roche agreement will continue until the date when no royalty or other payment obligations are or will become due, unless earlier terminated in accordance with the terms of the Roche agreement. Prior to its exercise of its first option, Roche may terminate the Roche agreement at will, in whole or on a collaboration target-by-collaboration target basis, upon 120 days' prior written notice to us. Following its exercise of an option, Roche may terminate the Roche agreement at will, in whole, on a collaboration target-by-collaboration target basis, on a collaboration program-by-collaboration program basis or, if a licensed product has been commercially sold, on a country-by-country basis, (i) upon 120 days' prior written notice if a licensed product has not been commercially sold or (ii) upon 180 days' prior written notice if a licensed product has been commercially sold. Either party may terminate the Roche agreement for the other party's uncured material breach or insolvency and in certain other circumstances agreed to by the parties. In certain termination circumstances, we are entitled to retain specified licenses to be able to continue to exploit the licensed products.

During the three and nine months ended September 30, 2016, we recognized revenue under the Roche agreement of $1.4 million and $3.0 million, respectively, which represents a portion of the $45.0 million upfront payment.

Ventana

In March 2016, we entered into a master collaboration agreement and project schedules, which we refer to collectively as the Ventana agreement, with Ventana, a member of the Roche Group. Pursuant to the Ventana agreement, Ventana has agreed to develop and commercialize an assay as a companion diagnostic test to identify HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 protein overexpression for use with BLU-554. FGF19 is a ligand that activates FGFR4, a kinase that is aberrantly activated and is a driver of disease in a subset of patients with HCC. The parties anticipate using Ventana's investigational immunohistochemistry, or IHC, assay to initially develop the companion diagnostic test. IHC is a process of detecting proteins in tissue cells.

Under the Ventana agreement, Ventana is responsible for developing, and obtaining and maintaining regulatory approvals for, the companion diagnostic test in the United States, specified countries in the European Union, any other countries that recognize the CE/in vitro diagnostic self-registration process and such other countries as the parties may mutually agree. If despite using commercially reasonable efforts Ventana fails, or refuses to seek, obtain or maintain regulatory approvals for, the companion diagnostic test in any country in which Ventana is responsible for obtaining and maintaining regulatory approvals, or in the case of certain specified supply failures or failures to commercialize the companion diagnostic test in any such country, then the parties will negotiate in good faith to select, agree upon and implement one or more alternative arrangements that are reasonably acceptable to the parties for the companion diagnostic test in such country or countries.

Pursuant to the Ventana agreement, the parties will form a joint steering committee comprised of an equal number of representatives from us and Ventana. The joint steering committee will oversee the activities under the Ventana agreement and any project schedule. Upon the request of either party, the joint steering committee will form one or more of the following committees: a joint development committee, joint commercialization committee or joint patent committee.

Under the Ventana agreement, each party has granted the other party specified intellectual property licenses to enable the other party to perform its obligations and exercise its rights under the Ventana agreement, including license grants to enable Ventana to develop and commercialize companion diagnostic tests for use with any of our products that are the subject of the Ventana agreement and to enable us to develop and commercialize its products with any companion diagnostic test developed by Ventana under the Ventana agreement. Certain of the license rights granted by each party generally survive termination of the Ventana agreement. Ventana remains free to develop its companion

diagnostic tests for use with a third party's therapeutic products, and we remain free to engage a third party to develop other companion diagnostic tests for use with BLU-554 and any of our other drug candidates.

Subject to the terms of the Ventana agreement, we will pay Ventana an aggregate amount of up to approximately $12.3 million over the term of the development program for the companion diagnostic test for BLU-554. In addition, we will reimburse Ventana for certain pass-through costs and will be obligated to pay Ventana up to an additional $2.0 million if we elect to have Ventana perform additional optional validation studies specified in the Ventana agreement. These amounts are subject to adjustment if the parties determine that changes in the scope of the development program are required. In addition, Ventana will retain all proceeds from the commercialization of the companion diagnostic test.

The Ventana agreement will continue until terminated by either party in accordance with its terms. If all projects under the Ventana agreement have been terminated in accordance with the terms of the Ventana agreement, either party may terminate the Ventana agreement for convenience upon 30 days' prior written notice to the other party. We are permitted to terminate any project under the Ventana agreement upon 30 days' prior written notice to Ventana in the event we cease to continue developing or commercializing the applicable product or for convenience and, under specified circumstances, payment of a termination fee and wind-down costs. Ventana is permitted to terminate any project under the Ventana agreement upon 30 or 180 days' prior written notice to us depending on the circumstances of such termination. Either party may terminate the Ventana agreement upon a material breach of the other party that is not cured within 60 days after written notice of such breach or immediately upon the bankruptcy or insolvency of the other party.

Qiagen

In August 2016, we entered into a master collaboration agreement and a project schedule, which we refer to collectively as the Qiagen agreement, with Qiagen. Pursuant to the Qiagen agreement, Qiagen has agreed to develop and commercialize an assay as a companion diagnostic test to identify GIST patients with the PDGFRα D842V mutation for use with BLU-285, one of our lead drug candidates.

Under the Qiagen agreement, Qiagen is responsible for developing, and obtaining and maintaining regulatory approvals for, the companion diagnostic test in the United States, the European Union, Canada and such other countries as the parties may mutually agree. In addition, Qiagen has agreed to use commercially reasonable efforts to manufacture the companion diagnostic test and to make the companion diagnostic test commercially available in the United States, the major European markets, Canada and such other countries as the parties may mutually agree. Under the Qiagen agreement, Qiagen has agreed to undertake specified actions to minimize the risk of an inability of supply occurring for the manufacture of the companion diagnostic test, and if Qiagen elects not to commercialize the companion diagnostic test itself in any country, Qiagen has agreed to procure alternative distribution channels or otherwise supply the companion diagnostic test to us in such quantities and upon commercially reasonable terms as necessary in order to enable us to market BLU-285 for GIST patients with the PDGFRα D842V mutation in combination with the companion diagnostic test. Qiagen remains free to develop its companion diagnostic tests for use with a third party's therapeutic products, and we remain free to engage a third party to develop other companion diagnostic tests for use with BLU-285 and any of our other drug candidates.

Subject to the terms of the Qiagen agreement and upon achievement of specified technical and development milestones, we will pay Qiagen an aggregate amount of up to approximately $6.1 million over the term of the development program for the companion diagnostic test for BLU-285. In addition, we will reimburse Qiagen for certain pass-through costs. These amounts are subject to adjustment if the parties determine that changes in the scope of the development program are required. In addition, Qiagen will retain all proceeds from the commercialization of the companion diagnostic test.

The Qiagen agreement expires on the later to occur of (i) the fifth anniversary of the Qiagen agreement and (ii) the term of any project schedule executed under the Qiagen agreement. We may terminate the Qiagen agreement or a project schedule (i) upon 30 days' prior written notice to Qiagen if such termination is due to our cessation of further development of BLU-285 or any other drug candidate covered by a project schedule executed under the Qiagen agreement and (ii) for convenience upon 120 day's prior written notice to Qiagen. Either party may terminate the Qiagen agreement or any project schedule executed under the Qiagen agreement, as applicable, upon a material breach of the

other party that is not cured within 30 days after written notice of such breach or immediately upon the bankruptcy or insolvency of the other party. In the event of a termination of the Qiagen agreement by us, we will be obligated to pay Qiagen wind-down and other costs and final payments.

Financial Operations Overview

Revenue

To date, we have not generated any revenue from drug sales and do not expect to generate any revenue from the sale of drugs in the near future. Our revenue consists of collaboration revenue under the Alexion agreement and Roche agreement, including amounts that are recognized related to upfront payments, milestone payments and amounts due to us for research and development services. In the future, revenue may include additional milestone payments and royalties on any net product sales under the respective collaboration agreements. We expect that any revenue we generate will fluctuate from quarter to quarter as a result of the timing and amount of license fees, research and development reimbursements, payments for manufacturing services, and milestone and other payments.

In the future, we will seek to generate revenue from a combination of drug sales and additional strategic relationships we may enter into.

Expenses

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our drug discovery efforts, and the development of our drug candidates, which include:

- employee-related expenses including salaries, benefits, and stock-based compensation expense;
- expenses incurred under agreements with third parties that conduct research and development, pre-clinical activities, clinical activities and manufacturing on our behalf;
- the cost of consultants;
- the cost of lab supplies and acquiring, developing and manufacturing pre-clinical study and clinical trial materials; and
- facilities, depreciation, and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance, and other operating costs.

Research and development costs are expensed as incurred. Costs for certain activities are recognized based on an evaluation of the progress to completion of specific tasks. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed.

The successful development of our drug candidates is highly uncertain. As such, at this time, we cannot reasonably estimate or know the nature, timing and estimated costs of the efforts that will be necessary to complete the remainder of the development of these drug candidates. We are also unable to predict when, if ever, material net cash inflows will commence from our drug candidates. This is due to the numerous risks and uncertainties associated with developing drugs, including the uncertainty of:

- establishing an appropriate safety profile with IND-enabling toxicology studies;
- successful enrollment in, and completion of clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;

· establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;

· obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our drug candidates;

· commercializing the drug candidates, if and when approved, whether alone or in collaboration with others; and

· continued acceptable safety profile of the drugs following approval.

A change in the outcome of any of these variables with respect to the development of any of our drug candidates would significantly change the costs and timing associated with the development of that drug candidate.

Research and development activities are central to our business model. Drug candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect research and development costs to increase significantly for the foreseeable future as our drug candidate development programs progress. However, we do not believe that it is possible at this time to accurately project total program-specific expenses through commercialization. There are numerous factors associated with the successful commercialization of any of our drug candidates, including future trial design and various regulatory requirements, many of which cannot be determined with accuracy at this time based on our stage of development. In addition, future commercial and regulatory factors beyond our control will impact our clinical development programs and plans.

A significant portion of our research and development expenses have been external expenses, which we track on a program-by-program basis following nomination as a development candidate. Our internal research and development expenses are primarily personnel-related expenses, including stock-based compensation expense. We do not track our internal research and development expenses on a program-by-program basis as they are deployed across multiple projects under development. The following table summarizes our external research and development expenses by program for the three and nine months ended September 30, 2016 and 2015. Pre-development candidate expenses, unallocated expenses and internal research and development expenses have been classified separately.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2015	2016	2015
	(in thousands)		(in thousands)	
BLU-285 external expenses	$ 2,268	$ 1,670	$ 6,684	$ 4,324
BLU-554 external expenses	2,567	1,768	7,670	3,934
BLU-667 external expenses	1,082	—	5,435	—
Other development candidate expenses	4	—	121	—
Pre-development candidate expenses and unallocated expenses	7,673	5,144	23,695	14,715
Internal research and development expenses	4,556	3,099	13,453	9,184
Total research and development expenses	$ 18,150	$ 11,681	$ 57,058	$ 32,157

We expect that our research and development expenses will increase in future periods as we expand our operations and incur additional costs in connection with our clinical trials. These increases will likely include the costs related to the implementation and expansion of clinical trial sites and related patient enrollment, monitoring and program management expenses. In addition, we expect that our research and development expenses will increase in future periods as we incur additional costs in connection with research and development activities under our collaborations with Alexion and Roche and development activities for companion diagnostics, including our companion diagnostics with Ventana and Qiagen.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in executive, finance, accounting, business development, legal and human resources functions. Stock-based compensation includes expense associated with stock-based awards issued to non-employees, including directors for non-board related services. Other significant costs include facility costs not otherwise included in research and development expenses, legal fees relating to patent and corporate matters and fees for accounting and consulting services.

We expect that our general and administrative expenses will increase in the future to support continued research and development activities, including as we continue our existing clinical trials and initiate additional clinical trials. These increases will likely include increased costs related to the hiring of additional personnel and fees to outside consultants, among other expenses. We have incurred and will continue to incur additional costs associated with operating as a public company.

Other Income (Expense)

Other income (expense) consists primarily of income earned on cash equivalents and investments and the re-measurement gain or loss associated with the change in the fair value of the convertible preferred stock warrant liability in periods prior to our IPO.

Interest Expense

Interest expense consists primarily of interest expense on amounts outstanding under a loan and security agreement that we entered into with Silicon Valley Bank in May 2013 and amortization of debt discount.

Critical Accounting Policies and Estimates

Our critical accounting policies are those policies that require the most significant judgments and estimates in the preparation of our financial statements. Management has determined that our most critical accounting policies are those relating to revenue recognition, accrued research and development expenses, available-for-sale investments and stock-based compensation.

Available-for-Sale Investments

We classify marketable securities with a remaining maturity when purchased of greater than three months as available-for-sale. Marketable securities with a remaining maturity date greater than one year are classified as non-current. Available-for-sale securities are maintained by an investment manager and may consist of U.S. Treasury securities and U.S. government agency securities. Available-for-sale securities are carried at fair value with the unrealized gains and losses included in other comprehensive income (loss) as a component of stockholders' equity until realized. Any premium or discount arising at purchase is amortized and/or accreted to interest income and/or expense over the life of the instrument. Realized gains and losses are determined using the specific identification method and are included in other income (expense). If any adjustment to fair value reflects a decline in value of the investment, we consider all available evidence to evaluate the extent to which the decline is "other-than-temporary" and, if so, mark the investment to market through a charge to our statement of operations and comprehensive loss.

There have been no significant changes to our critical accounting policies discussed in our Annual Report on Form 10-K for the year ended December 31, 2015 related to revenue recognition, accrued research and development expenses and stock-based compensation.

Results of Operations

Comparison of Three Months Ended September 30, 2016 and 2015

The following table summarizes our results of operations for the three months ended September 30, 2016 and 2015, together with the changes in those items in dollars and as a percentage:

	Three Months Ended September 30,			
	2016	2015	Dollar Change	% Change
	(in thousands)			
Collaboration revenue	$ 6,160	$ 3,426	$ 2,734	80 %
Operating expenses:				
Research and development	18,150	11,681	6,469	55
General and administrative	4,893	4,222	671	16
Total operating expenses	23,043	15,903	7,140	45
Other income (expense):				
Other income, net	158	6	152	2,533
Interest expense	(109)	(171)	62	36
Total other income (expense)	49	(165)	214	130
Net loss	$ (16,834)	$ (12,642)	$ (4,192)	(33)%

Collaboration Revenue

Collaboration revenue increased by $2.7 million from $3.4 million for the three months ended September 30, 2015 to $6.2 million for the three months ended September 30, 2016. Collaboration revenue for the three months ended September 30, 2016 was related to the Alexion agreement and Roche agreement. Collaboration revenue under the Alexion agreement began in March 2015 upon the execution of the Alexion agreement. We entered into the Roche agreement in March 2016 and recorded $1.4 million in collaboration revenue under the Roche agreement for the three months ended September 30, 2016. The increase in collaboration revenue under the Alexion agreement of $1.3 million was primarily attributable to increased reimbursable research and development costs and a $1.0 million milestone payment recognized upon achievement during the three months ended September 30, 2016.

Research and Development Expense

Research and development expense increased by $6.5 million from $11.7 million for the three months ended September 30, 2015 to $18.2 million for the three months ended September 30, 2016. The increase in research and development expense was primarily attributable to the following:

- approximately $2.0 million in increased expenses associated with clinical manufacturing activities;
- approximately $1.6 million in increased personnel expense primarily due to a 37% increase in headcount, largely driven by growth in the clinical and non-clinical organizations as we advanced our lead drug candidates, BLU-285 and BLU-554, into clinical trials, including an increase in stock-based compensation expense;
- approximately $1.2 million in increased expenses for external clinical activities as we advanced our lead drug candidates, BLU-285 and BLU-554, into clinical trials;
- approximately $1.0 million in increased expenses associated with continuing to build our platform and advance our discovery pipeline, including costs related to the Alexion agreement; and
- approximately $0.4 million in increased expenses associated with IND-enabling pre-clinical toxicology studies, primarily related to the Alexion agreement.

We expect that our research and development expense will increase in future periods as we expand our operations and incur additional costs in connection with our clinical trials. These increases will likely include the costs related to the implementation and expansion of clinical trial sites and related patient enrollment, monitoring and program management expenses. In addition, we expect that our research and development expense will increase in future periods as we incur additional costs in connection with our collaborations with Alexion and Roche and development activities for companion diagnostics, including our companion diagnostics with Ventana and Qiagen.

General and Administrative Expense

General and administrative expense increased by $0.7 million from $4.2 million for the three months ended September 30, 2015 to $4.9 million for the three months ended September 30, 2016. The increase in general and administrative expense was primarily attributable to increased personnel costs primarily due to an increase of 51% in general and administrative headcount to support our overall growth as a publicly traded company, including an increase in stock-based compensation expense.

We expect that our general and administrative expense will increase in future periods as we expand our operations and incur additional costs in connection with being a public company.

Other Income (Expense), Net

Other income, net, increased by $0.2 million from less than $0.1 million of expense for the three months ended September 30, 2015 to $0.2 million of income for the three months ended September 30, 2016. The increase in other income, net, was primarily related to an increase in investment income during the three months ended September 30, 2016.

Interest Expense

Interest expense decreased by $0.1 million from $0.2 million for the three months ended September 30, 2015 to $0.1 million for the three months ended September 30, 2016. The decrease was primarily related to a decrease in the average outstanding principle balance for the three months ended September 30, 2016 under the loan and security agreement with Silicon Valley Bank. We expect that interest expense will continue to decrease in subsequent periods as the principal amount under the loan decreases.

Comparison of Nine months Ended September 30, 2016 and 2015

The following table summarizes our results of operations for the nine months ended September 30, 2016 and 2015, together with the changes in those items in dollars and as a percentage:

	Nine Months Ended September 30,			
	2016	2015	Dollar Change	% Change
	(in thousands)			
Collaboration revenue	$ 20,081	$ 6,765	$ 13,316	197 %
Operating expenses:				
Research and development	57,058	32,157	24,901	77
General and administrative	14,227	10,832	3,395	31
Total operating expenses	71,285	42,989	28,296	66
Other income (expense):				
Other income (expense), net	350	(435)	785	180
Interest expense	(378)	(535)	157	29
Total other income (expense)	(28)	(970)	942	97
Net loss	$ (51,232)	$ (37,194)	$ (14,038)	(38)%

Collaboration Revenue

Collaboration revenue increased by $13.3 million from $6.8 million for the nine months ended September 30, 2015 to $20.1 million for the nine months ended September 30, 2016. Collaboration revenue for the nine months ended September 30, 2016 was related to the Alexion agreement and Roche agreement. Collaboration revenue under the Alexion agreement began in March 2015 upon the execution of the Alexion agreement. We entered into the Roche agreement in March 2016 and recorded $3.0 million in collaboration revenue under the Roche agreement for the nine months ended September 30, 2016. The increase in collaboration revenue under the Alexion agreement of $10.3 million was primarily attributable to increased reimbursable research and development costs, increased recognition of portions of the $15.0 million upfront payment and $1.8 million milestone payment received from Alexion and $1.75 million of milestone payments recognized upon achievement during the nine months ended September 30, 2016.

Research and Development Expense

Research and development expense increased by $24.9 million from $32.2 million for the nine months ended September 30, 2015 to $57.1 million for the nine months ended September 30, 2016. The increase in research and development expense was primarily attributable to the following:

- approximately $8.3 million in increased expenses associated with clinical manufacturing activities;
- approximately $5.0 million in increased expenses for external clinical activities as we advanced our lead drug candidates, BLU-285 and BLU-554, into clinical trials;
- approximately $4.8 million in increased personnel expense primarily due to a 22% increase in headcount, largely driven by growth in the clinical and non-clinical organizations as we advanced our lead drug candidates, BLU-285 and BLU-554, into clinical trials, including an increase in stock-based compensation expense;
- approximately $4.3 million in increased expenses associated with continuing to build our platform and advance our discovery pipeline, including costs associated with development of BLU-667 and costs related to the Alexion agreement; and
- approximately $1.7 million in increased expenses associated with IND-enabling pre-clinical toxicology studies, primarily related to BLU-667 and the Alexion agreement.

General and Administrative Expense

General and administrative expense increased by $3.4 million from $10.8 million for the nine months ended September 30, 2015 to $14.2 million for the nine months ended September 30, 2016. The increase in general and administrative expense was primarily attributable to the following:

- approximately $1.8 million in increased personnel costs primarily due to an increase of 51% in general and administrative headcount to support our overall growth as a publicly traded company, including an increase in stock-based compensation expense; and
- approximately $1.1 million in increased professional fees, including external legal fees, insurance premiums and market research costs.

Other Income (Expense), Net

Other income (expense), net, increased by $0.8 million from $0.4 million of expense for the nine months ended September 30, 2015 to $0.4 million of income for the nine months ended September 30, 2016. The increase in other income (expense), net, was primarily related to the impact of the re-measurement associated with the change in the fair value of the convertible preferred stock warrant liability included in the prior year and no longer applicable following the conversion of preferred stock to common stock as a result of the IPO. Also contributing to the increase in other income was the increase in investment income during the nine months ended September 30, 2016.

Interest Expense

Interest expense decreased by $0.1 million from $0.5 million for the nine months ended September 30, 2015 to $0.4 million for the nine months ended September 30, 2016. The decrease was primarily related to a decrease in the average outstanding principle balance for the nine months ended September 30, 2016 under the loan and security agreement with Silicon Valley Bank.

Liquidity and Capital Resources

Sources of Liquidity

To date, we have financed our operations primarily through our IPO, private placements of our convertible preferred stock and, to a lesser extent, the Alexion agreement, the Roche agreement and a debt financing. Through September 30, 2016, we have received an aggregate of $357.5 million from such transactions, including $168.6 million in gross proceeds from our IPO, $115.1 million in gross proceeds from the issuance of convertible preferred stock, $18.8 million of upfront and milestone payments from Alexion, a $45.0 million upfront payment from Roche and $10.0 million in gross proceeds from the debt financing.

As of September 30, 2016, we had cash, cash equivalents and investments of $152.5 million.

Cash Flows

The following table provides information regarding our cash flows for the nine months ended September 30, 2016 and 2015:

	Nine Months Ended September 30,	
(in thousands)	**2016**	**2015**
Net cash used in operating activities	$ (5,716)	$ (18,630)
Net cash used in investing activities	(80,535)	(2,395)
Net cash (used in) provided by financing activities	(2,053)	153,565
Net (decrease) increase in cash and cash equivalents	$ (88,304)	$ 132,540

Operating Activities. Net cash used by operating activities was $5.7 million during the nine months ended September 30, 2016 compared to $18.6 million during the nine months ended September 30, 2015. The decrease in cash used in operating activities was primarily due to changes in deferred revenue related to the timing and amount of upfront payments from Alexion and Roche, partially offset by an increase in net loss of $14.0 million for the nine months ended September 30, 2016 as compared to the nine months ended September 30, 2015. In the nine months ended September 30, 2016, we received a $45.0 million upfront payment from Roche, and in the nine months ended September 30, 2015, we received a $15.0 million upfront payment from Alexion.

Investing Activities. Net cash used in investing activities was $80.5 million during the nine months ended September 30, 2016 compared to net cash used in investing activities of $2.4 million during the nine months ended September 30, 2015. Net cash used in investing activities for the nine months ended September 30, 2016 consisted primarily of purchases and maturities of investments. We classify these investments as available-for-sale and record them at fair value in the accompanying condensed consolidated balance sheets. Net cash used in investing activities for the nine months ended September 30, 2015 consisted of a security deposit payment for our new office lease agreement and purchases of property and equipment.

Financing Activities. Net cash used in financing activities was $2.1 million during the nine months ended September 30, 2016 compared to net cash provided by financing activities of $153.6 million during the nine months ended September 30, 2015. Net cash used in financing activities for the nine months ended September 30, 2016 was primarily due to principal payments under the loan and security agreement with Silicon Valley Bank. Net cash provided by financing activities for the nine months ended September 30, 2015 was primarily due to net proceeds from the IPO after deducting underwriting discounts and commissions and offering costs paid by us.

Borrowings

In May 2013, we entered into the loan and security agreement with Silicon Valley Bank. Under the terms of the loan and security agreement, we borrowed $5.0 million. Loan advances accrue interest at a fixed rate of 2.0% above the prime rate. In November 2014, we amended the loan and security agreement and borrowed an additional $5.0 million. Each loan advance included an interest only payment period. During 2014, we paid principal payments of $0.7 million on the first $3.0 million of advances. During the year ended December 31, 2015, we paid principal payments of $1.8 million on the first $10.0 million of advances, and during the nine months ended September 30, 2016, we paid principal payments of $2.5 million on the first $10.0 million of advances. We are required to pay a fee of 4.0% of the total loan advances at the end of the term of the loan. There are no financial covenants associated with the loan and security agreement. As of September 30, 2016, we had $4.9 million in outstanding principal under the loan and security agreement.

The term loan is collateralized by a blanket lien on all corporate assets, excluding intellectual property, and by a negative pledge of our intellectual property. The term loan contains covenants, including restrictions on dividends and default provisions. We have determined that the risk of subjective acceleration under the material adverse events clause is remote and therefore has classified the outstanding principal in current and long term liabilities based on scheduled principal payments.

See Note 7, “Term Loan,” in the accompanying notes to our unaudited condensed consolidated financial statements for additional information.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development of, continue and initiate clinical trials of, and seek marketing approval for, our drug candidates. In addition, if we obtain marketing approval for any of our drug candidates, we expect to incur significant commercialization expenses related to drug sales, marketing, manufacturing and distribution to the extent that such sales, marketing and distribution are not the responsibility of potential collaborators. Furthermore, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

As of September 30, 2016, we had cash, cash equivalents and investments of $152.5 million. We expect that our existing cash, cash equivalents and investments will be sufficient to enable us to fund our operating expenses and capital expenditure requirements into early 2018. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of drug discovery, pre-clinical development, laboratory testing and clinical trials for our drug candidates;
- the costs of producing drug substance and drug product material for use in pre-clinical studies and clinical trials;
- the scope, prioritization and number of our research and development programs;
- the costs, timing and outcome of regulatory review of our drug candidates;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any collaboration agreements we obtain;
- the extent to which we are obligated to reimburse, or entitled to reimbursement of, clinical trial costs under future collaboration agreements, if any;

- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the extent to which we acquire or in-license other drug candidates and technologies;
- the costs of securing manufacturing arrangements for development activities and commercial production; and
- the costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory approvals to market our drug candidates.

Identifying potential drug candidates and conducting pre-clinical studies and clinical trials is a time-consuming, expensive and uncertain process that takes many years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve drug sales. In addition, our drug candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of drugs that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Until such time, if ever, as we can generate substantial drug revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. At this time, we do not have any committed external source of funds outside of those to be earned in connection with our agreements with Alexion and Roche. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

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

Contractual Obligations

In March 2016, we entered into the Ventana agreement pursuant to which Ventana has agreed to develop and commercialize the companion diagnostic for BLU-554 that we expect to use to identify HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 overexpression. Subject to the terms of the Ventana agreement, we will pay Ventana an aggregate amount of up to approximately $12.3 million over the term of the development program for the companion diagnostic test for BLU-554 plus pass-through costs and certain other specified amounts. See “—Collaborations and Partnerships—Ventana” above for additional information on the Ventana agreement.

In August 2016, we entered into the Qiagen agreement pursuant to which Qiagen has agreed to develop and commercialize the companion diagnostic for BLU-285 that we expect to use to identify GIST patients with the PDGFRα D842V mutation. Subject to the terms of the Qiagen agreement and upon achievement of specified technical and development milestones, we will pay QIAGEN an aggregate amount of up to approximately $6.1 million over the term of the development program for the companion diagnostic test for BLU-285 plus pass-through costs. These amounts are subject to adjustment if the parties determine that changes in the scope of the development program are required. See “—Collaborations and Partnerships—Qiagen” above for additional information on the Qiagen agreement.

As of September 30, 2016, there have been no other material changes to our contractual obligations and commitments from those described under “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in the Annual Report on Form 10-K for the year ended December 31, 2015.

Off-Balance Sheet Arrangements

We did not have, during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable SEC rules.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

As of September 30, 2016, we had cash, cash equivalents and investments of $152.5 million, consisting primarily of money market funds and investments in U.S. treasury obligations.

Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in short-term marketable securities. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, we believe an immediate 10% change in interest rates would not have a material effect on the fair market value of our investment portfolio. We have the ability to hold our investments until maturity, and therefore, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a change in market interest rates on our investment portfolio.

We are also exposed to market risk related to changes in foreign currency exchange rates. From time to time, we contract with vendors that are located Asia and Europe, which are denominated in foreign currencies. We are subject to fluctuations in foreign currency rates in connection with these agreements. We do not currently hedge our foreign currency exchange rate risk. As of September 30, 2016 and December 31, 2015, we had minimal or no liabilities denominated in foreign currencies.

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the three and nine months ended September 30, 2016 and 2015.

Item 4. Controls and Procedures

Management's Evaluation of our Disclosure Controls and Procedures

We maintain "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (1) recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms and (2) accumulated and communicated to our management, including our principal executive and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives.

Our management, with the participation of our Chief Executive Officer and Vice President of Finance (our principal executive officer and principal financial officer, respectively), evaluated the effectiveness of our disclosure controls and procedures as of September 30, 2016. Based upon such evaluation, our Chief Executive Officer and Vice President of Finance have concluded that, as of September 30, 2016, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control 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 Exchange Act) 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

We are not currently a party to any material legal proceedings.

Item 1A. Risk Factors

The following risk factors and other information included in this Quarterly Report on Form 10-Q should be carefully considered. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we presently deem less significant may also impair our business operations. Please see page 3 of this Quarterly Report on Form 10-Q for a discussion of some of the forward-looking statements that are qualified by these risk factors. If any of the following risks occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected.

Risks Related to Our Financial Position and Need for Additional Capital

We are a biopharmaceutical company with a limited operating history and have not generated any revenue from drug sales. We have incurred significant operating losses since our inception and anticipate that we will incur continued losses for the foreseeable future.

We are a biopharmaceutical company with a limited operating history on which investors can base an investment decision. Biopharmaceutical drug development is a highly speculative undertaking and involves a substantial degree of risk. We commenced operations in April 2011. Our operations to date have been limited primarily to organizing and staffing our company, business planning, raising capital, developing our technology, identifying potential drug candidates and undertaking pre-clinical studies and commencing Phase 1 clinical trials for our most advanced drug candidates, BLU-285 and BLU-554.

In June 2015, July 2015 and September 2015, respectively, the U.S. Food and Drug Administration, or FDA, accepted our Investigational New Drug, or IND, applications for BLU-554 for the treatment of advanced hepatocellular carcinoma, or HCC, and cholangiocarcinoma, BLU-285 for the treatment of unresectable, treatment-resistant gastrointestinal stromal tumor, or GIST, and BLU-285 for the treatment of advanced systemic mastocytosis, or SM. In June 2016, we amended the clinical trial protocol for BLU-554 to remove cholangiocarcinoma and expand the HCC cohort into three groups using central immunohistochemistry testing to stratify patients. We have initiated dose-escalation Phase 1 clinical trials for advanced HCC, unresectable, treatment-resistant GIST and advanced SM, and we are currently enrolling patients in each of these clinical trials. In September 2015, the FDA granted orphan drug designation to BLU-554 for the treatment of HCC, and in January 2016, the FDA granted orphan drug designation to BLU-285 for the treatment of GIST and SM. In October 2016, the FDA granted fast track designation to BLU-285 for the treatment of patients with unresectable or metastatic GIST that progressed following treatment with imatinib and a second tyrosine kinase inhibitor and for the treatment of patients with unresectable or metastatic GIST with the PDGFRα D842V mutation regardless of prior therapy. We have never generated any revenue from drug sales. We have not obtained regulatory approvals for any of our drug candidates.

We have not yet demonstrated our ability to successfully complete any clinical trials, including large-scale, pivotal clinical trials, obtain regulatory approvals, manufacture a commercial scale drug, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Typically, it takes many years to develop one new drug from the time it is discovered to when it is available for treating patients. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history. We will need to transition from a company with a research focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

Since inception, we have focused substantially all of our efforts and financial resources on developing our proprietary compound library, novel target discovery engine and initial drug candidates. In May 2015, we completed an initial public offering, or IPO, of our common stock, which resulted in the sale of 9,367,708 shares, including 1,221,874 shares sold by us pursuant to the exercise in full by the underwriters of their option to purchase additional shares in connection with the offering, at a price to the public of $18.00 per share, resulting in gross proceeds of $168.6 million

before deducting underwriting discounts and commissions and offering costs paid by us. To date, we have financed our operations primarily through our IPO, private placements of our convertible preferred stock and, to a lesser extent, the research, development and commercialization agreement, or Alexion agreement, that we entered into in March 2015 with Alexion Pharma Holding, or Alexion, the collaboration and license agreement, or Roche agreement, that we entered into in March 2016 with F. Hoffmann-La Roche Ltd and Hoffmann-La Roche Inc., or collectively, Roche, and a debt financing. Through September 30, 2016, we have received an aggregate of $357.5 million from such transactions, including $168.6 million in gross proceeds from our IPO, $115.1 million in gross proceeds from the issuance of convertible preferred stock, $18.8 million of upfront and milestone payments from Alexion, a $45.0 million upfront payment from Roche and $10.0 million in gross proceeds from the debt financing. As of September 30, 2016, we had cash, cash equivalents and investments of $152.5 million.

We have incurred net losses in each year since our inception, and as of September 30, 2016, we had an accumulated deficit of $186.2 million. Our net loss was $51.2 million for the nine months ended September 30, 2016, $52.8 million for the year ended December 31, 2015, $40.3 million for the year ended December 31, 2014 and $20.9 million for the year ended December 31, 2013. Substantially all of our operating losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to continue to incur significant expenses and operating losses over the next several years and for the foreseeable future. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' deficit and working capital. We expect our research and development expenses to significantly increase in connection with continuing our existing clinical trials and beginning additional clinical trials. In addition, if we obtain marketing approval for our drug candidates, we will incur significant sales, marketing and outsourced-manufacturing expenses. We have incurred and will continue to incur additional costs associated with operating as a public company. As a result, we expect to continue to incur significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with developing pharmaceuticals, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis. Our ability to become profitable depends upon our ability to generate revenue.

To date, we have not generated any revenue from our lead drug candidates, BLU-285 and BLU-554, and we do not know and do not expect to generate any revenue from the sale of drugs in the near future. We do not expect to generate significant revenue unless and until we obtain marketing approval of, and begin to sell, BLU-285, BLU-554 or one of our other drug candidates. Our ability to generate revenue depends on a number of factors, including, but not limited to, our ability to:

- initiate and successfully complete clinical trials that meet their clinical endpoints;
- initiate and successfully complete all safety studies required to obtain U.S. and foreign marketing approval for our drug candidates;
- establish commercial manufacturing capabilities or make arrangements with third party manufacturers for clinical supply and commercial manufacturing;
- commercialize our drug candidates, if approved, by developing a sales force or entering into additional collaborations with third parties; and
- achieve market acceptance of our drug candidates in the medical community and with third-party payors.

We expect to incur significant sales and marketing costs as we prepare to commercialize our drug candidates. Even if we initiate and successfully complete pivotal clinical trials of our drug candidates, and our drug candidates are approved for commercial sale, and despite expending these costs, our drug candidates may not be commercially successful. We may not achieve profitability soon after generating drug sales, if ever. If we are unable to generate drug revenue, we will not become profitable and may be unable to continue operations without continued funding.

We may need to raise substantial additional funding. If we are unable to raise capital when needed, we would be forced to delay, reduce or eliminate some of our drug development programs or commercialization efforts.

The development of pharmaceuticals is capital-intensive. We are currently advancing our lead drug candidates, BLU-285 and BLU-554, through clinical development. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development of, initiate or continue clinical trials of, and seek marketing approval for, our drug candidates. In addition, depending on the status of regulatory approval or, if we obtain marketing approval for any of our drug candidates, we expect to incur significant commercialization expenses related to drug sales, marketing, manufacturing and distribution to the extent that such sales, marketing and distribution are not the responsibility of Alexion, Roche or other collaborators. We may also need to raise additional funds sooner if we choose to pursue additional indications or geographies for our drug candidates or otherwise expand more rapidly than we presently anticipate. Furthermore, we expect to continue to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate certain of our research and development programs or future commercialization efforts.

As of September 30, 2016, we had cash, cash equivalents and investments of $152.5 million. We expect that our existing cash, cash equivalents and investments will be sufficient to enable us to fund our operating expenses and capital expenditure requirements into early 2018. Our future capital requirements will depend on and could increase significantly as a result of many factors, including:

- the scope, progress, results and costs of drug discovery, pre-clinical development, laboratory testing and clinical trials for our drug candidates;
- the costs of producing drug substance and drug product material for use in pre-clinical studies and clinical trials;
- the scope, prioritization and number of our research and development programs;
- the success of our collaborations with Alexion and Roche;
- the success of our current or future companion diagnostic collaborations, including our companion diagnostic with Ventana Medical Systems, Inc., or Ventana, for BLU-554 and our companion diagnostic with QIAGEN Manchester Limited, or Qiagen, for BLU-285;
- the costs, timing and outcome of regulatory review of our drug candidates;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any additional collaboration agreements we obtain;
- the extent to which we are obligated to reimburse, or entitled to reimbursement of, clinical trial costs under future collaboration agreements, if any;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the extent to which we acquire or in-license other drug candidates and technologies;
- the costs of securing manufacturing arrangements for development activities and commercial production; and
- the costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory clearances to market our drug candidates.

Identifying potential drug candidates and conducting pre-clinical development and testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve drug sales. In addition, our drug candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of drugs that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our drug candidates. Dislocations in the financial markets have generally made equity and debt financing more difficult to obtain and may have a material adverse effect on our ability to meet our fundraising needs. We cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborators or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or drug candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any drug candidate or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

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

Until such time, if ever, as we can generate substantial drug revenues, we expect to finance our cash needs through a combination of public and private equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. We do not have any committed external source of funds, other than our collaborations with Alexion and Roche, each of which is limited in scope and duration, and funds already borrowed under the loan and security agreement that we entered into with Silicon Valley Bank in May 2013. Pursuant to our registration statement on Form S-3 (File No. 333-211266), which was declared effective by the SEC on July 25, 2016, we may sell up to $250,000,000 in aggregate dollar amount of securities, including common stock, from time to time in one or more offerings. To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that materially adversely affect the rights of our common stockholders. Debt financing, if available, would increase our fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

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

Risks Related to Drug Development and Regulatory Approval

We are very early in our development efforts with only two drug candidates, BLU-285 and BLU-554, in clinical development. All of our other drug candidates are currently in pre-clinical or earlier stages of development. If we are unable to advance our other drug candidates to clinical development, obtain regulatory approval for our lead drug candidates or other drug candidates and ultimately commercialize our lead drug candidates or other drug candidates, or experience significant delays in doing so, our business will be materially harmed.

We are very early in our development efforts with only two drug candidates, BLU-285 and BLU-554, in clinical development. All of our other drug candidates are currently in pre-clinical or earlier stages of development. We have invested substantially all of our efforts and financial resources in the identification and pre-clinical development of kinase inhibitors, including the development of our lead drug candidates, BLU-285 and BLU-554. Our ability to generate drug revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our drug candidates, which may never occur. We currently generate no revenues from sales of any drugs, and we may never be able to develop or commercialize a marketable drug. Each of our drug candidates will require additional pre-clinical or clinical development, management of clinical, pre-clinical and manufacturing activities, regulatory approval in multiple jurisdictions, obtaining manufacturing supply, building of a commercial organization, substantial investment and significant marketing efforts before we generate any revenues from drug sales. In addition, our drug development programs contemplate the development of companion diagnostics, which are assays or tests to identify an appropriate patient population. For example, we have entered into an agreement with Ventana to develop and commercialize a companion diagnostic for BLU-554 in order to identify HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 overexpression, and we have entered into an agreement with Qiagen to develop and commercialize a companion diagnostic for BLU-285 in order to identify GIST patients with the PDGFRα D842V mutation. Companion diagnostics are subject to regulation as medical devices and must themselves be approved for marketing by the FDA or certain other foreign regulatory agencies before we may commercialize our drug candidates. The success of our lead drug candidates and other drug candidates will depend on several factors, including the following:

- successful enrollment in, and completion of, clinical trials, including our current Phase 1 clinical trials for BLU-285 and BLU-554;
- successful completion of pre-clinical studies for our other drug candidates;
- approval of INDs for future clinical trials for our other drug candidates;
- successful development of companion diagnostics for use with our drug candidates, including the development of a companion diagnostic for BLU-554 for identifying HCC patients with FGF19 signaling and BLU-285 for identifying GIST patients with the PDGFRα D842V mutation;
- receipt of regulatory approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers for clinical supply and commercial manufacturing;
- obtaining and maintaining patent and trade secret protection or regulatory exclusivity for our drug candidates;
- launching commercial sales of our drug candidates, if and when approved, whether alone or in collaboration with others;
- acceptance of the drug candidates, if and when approved, by patients, the medical community and third party payors;
- effectively competing with other therapies;

- obtaining and maintaining healthcare coverage and adequate reimbursement;
- enforcing and defending intellectual property rights and claims; and
- maintaining a continued acceptable safety profile of the drug candidates following approval.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our drug candidates, which would materially harm our business. If we do not receive regulatory approvals for our drug candidates, we may not be able to continue our operations.

Our approach to the discovery and development of drug candidates that inhibit kinases is unproven, and we do not know whether we will be able to develop any drugs of commercial value.

Our scientific approach focuses on using our novel target discovery engine and our proprietary compound library to identify new kinase targets in disease indications. Our focus on using our novel target discovery engine to identify potential kinase targets in disease indications may not result in the discovery and development of commercially viable drugs for these diseases. The use of our proprietary compound library may not lead to the development of commercially viable drugs. Even if we are able to develop a drug candidate that successfully targets these kinases in pre-clinical studies, we may not succeed in demonstrating safety and efficacy of the drug candidate in clinical trials.

Clinical drug development involves a lengthy and expensive process, with an uncertain outcome. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our drug candidates.

Each of our lead drug candidates, BLU-285 and BLU-554, is in clinical development, and all of our other drug candidates are in pre-clinical development. The risk of failure for our lead drug candidates and other drug candidates is high. It is impossible to predict when or if any of our drug candidates will prove effective and safe in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any drug candidate, we must complete pre-clinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of our drug candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of testing. The outcome of pre-clinical development testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, pre-clinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their drug candidates performed satisfactorily in pre-clinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates. Our pre-clinical studies, current Phase 1 clinical trials and future clinical trials may not be successful.

We have initiated dose-escalation Phase 1 clinical trials for BLU-285 for the treatment of unresectable, treatment-resistant GIST, BLU-554 for the treatment of advanced HCC and BLU-285 for the treatment of advanced SM.

Successful completion of our clinical trials is a prerequisite to submitting a new drug application, or NDA, to the FDA and a Marketing Authorization Application, or MAA, in the European Union for each drug candidate and, consequently, the ultimate approval and commercial marketing of BLU-285, BLU-554 and our other drug candidates. We do not know whether any of our clinical trials for our lead drug candidates will be completed on schedule, if at all.

We may experience delays in completing our pre-clinical studies and initiating or completing clinical trials, and we may experience numerous unforeseen events during, or as a result of, any future clinical trials that we could conduct that could delay or prevent our ability to receive marketing approval or commercialize our drug candidates, including:

- regulators or institutional review boards, or IRBs, or ethics committees may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may experience delays in reaching, or fail to reach, agreement on acceptable terms with prospective trial sites and prospective contract research organizations, or CROs, the terms of which

can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;

- clinical trials of our drug candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional pre-clinical studies or clinical trials or we may decide to abandon drug development programs;
- the number of patients required for clinical trials of our drug candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- our third party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, or may deviate from the clinical trial protocol or drop out of the trial, which may require that we add new clinical trial sites or investigators;
- we may elect to, or regulators or IRBs or ethics committees may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our drug candidates may be greater than we anticipate;
- the supply or quality of our drug candidates or other materials necessary to conduct clinical trials of our drug candidates may be insufficient or inadequate;
- our drug candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators, regulators or IRBs or ethics committees to suspend or terminate the trials, or reports may arise from pre-clinical or clinical testing of other cancer therapies that raise safety or efficacy concerns about our drug candidates; and
- the FDA or other regulatory authorities may require us to submit additional data or impose other requirements before permitting us to initiate a clinical trial.

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. Many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our drug candidates. Further, the FDA may disagree with our clinical trial design and our interpretation of data from clinical trials, or may change the requirements for approval even after it has reviewed and commented on the design for our clinical trials.

If we are required to conduct additional clinical trials or other testing of our drug candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our drug candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our drug candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- be subject to post-marketing testing requirements; or

· have the drug removed from the market after obtaining marketing approval.

Our drug development costs will also increase if we experience delays in testing or regulatory approvals. We do not know whether any of our clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant pre-clinical study or clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our drug candidates or allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our drug candidates and may harm our business and results of operations. Any delays in our pre-clinical or future clinical development programs may harm our business, financial condition and prospects significantly.

We may choose not to develop a potential product candidate, or we may suspend or terminate one or more discovery programs or pre-clinical drug candidates or programs.

At any time and for any reason, we may determine that one or more of our discovery programs or pre-clinical drug candidates or programs does not have sufficient potential to warrant the allocation of resources toward such program or drug candidate. Accordingly, we may choose not to develop a potential drug candidate or elect to suspend or terminate one or more of our discovery programs or pre-clinical drug candidates or programs. If we suspend or terminate a program or drug candidate in which we have invested significant resources, we will have expended resources on a program that will not provide a full return on our investment and may have missed the opportunity to have allocated those resources to potentially more productive uses, including existing or future programs or drug candidates.

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

We may not be able to initiate or continue clinical trials for our drug candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. In particular, because we are focused on diseases in genomically defined patient populations, our ability to enroll eligible patients may be limited or may result in slower enrollment than we anticipate. In addition, some of our competitors have ongoing clinical trials for drug candidates that treat the same indications as our drug candidates, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' drug candidates.

Patient enrollment may be affected by other factors including:

· the severity of the disease under investigation;

· the size of the target patient population;

· the eligibility criteria for the clinical trial;

· the availability of an appropriate genomic screening test;

· the perceived risks and benefits of the drug candidate under study;

· the efforts to facilitate timely enrollment in clinical trials;

· the patient referral practices of physicians;

· the ability to monitor patients adequately during and after treatment; and

· the proximity and availability of clinical trial sites for prospective patients.

Because the target patient populations for our drug candidates are relatively small, it may be difficult to successfully identify patients, which may lead to delays in enrollment for our trials. If the market opportunities for our drug candidates are smaller than we believe they are, our product revenues may be adversely affected and our business may suffer.

We focus our research and product development on treatments for cancer and rare genetic diseases, including genomically defined cancer and diseases driven by abnormal kinase activation. Because the target patient populations for our drug candidates are relatively small, including our lead drug candidates BLU-285 and BLU-554, it may be difficult to successfully identify patients. We have entered into an agreement with Ventana to develop and commercialize a companion diagnostic for BLU-554 in order to identify HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 overexpression, and we have entered into an agreement with Qiagen to develop and commercialize a companion diagnostic for BLU-285 in order to identify GIST patients with the PDGFRα D842V mutation. We may engage third parties to develop companion diagnostics for use in some of our other current or future clinical trials. However, Ventana, Qiagen or other third parties may not be successful in developing such companion diagnostics, furthering the difficulty in identifying patients for our clinical trials. Our inability to enroll a sufficient number of patients in our clinical trials would result in significant delays and could require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our drug candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing. If we are unable to include patients with the driver of the disease, including the applicable genomic alteration for diseases in genomically defined patient populations, this could compromise our ability to seek participation in FDA's expedited review and approval programs, including breakthrough therapy designation and fast track designation, or otherwise to seek to accelerate clinical development and regulatory timelines. In addition, our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our drug candidates, are based on estimates. These estimates may prove to be incorrect, and new studies may reduce the estimated incidence or prevalence of these diseases. The number of patients in the United States, European Union and elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our products or patients may become increasingly difficult to identify and access, all of which would adversely affect our business, prospects and ability to achieve or sustain profitability.

If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals both for our drug candidates and for the related companion diagnostics, we will not be able to commercialize, or will be delayed in commercializing, our drug candidates, and our ability to generate revenue will be materially impaired.

Our drug candidates and the related companion diagnostics, including the companion diagnostic that we are developing with Ventana for BLU-554 in order to identify HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 overexpression and the companion diagnostic that we are developing with Qiagen for BLU-285 in order to identify GIST patients with the PDGFRα D842V mutation, and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, distribution, import and export are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by comparable authorities in other countries. Before we can commercialize any of our drug candidates, we must obtain marketing approval. We may also need marketing approval for the related companion diagnostics, including the companion diagnostic for BLU-554 that we are developing with Ventana or the companion diagnostic for BLU-285 that we are developing with Qiagen. We have not received approval to market any of our drug candidates or related companion diagnostics from regulatory authorities in any jurisdiction and it is possible that none of our drug candidates or any drug candidates or related companion diagnostics we may seek to develop in the future will ever obtain regulatory approval. We have only limited experience in filing and supporting the applications necessary to gain regulatory approvals and expect to rely on third-party CROs and/or regulatory consultants to assist us in this process. Securing regulatory approval requires the submission of extensive pre-clinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the drug candidate's safety and efficacy. Securing regulatory approval also requires the submission of information about the drug manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. Our drug candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining regulatory approvals, both in the United States and abroad, is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the drug candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted NDA for a drug candidate, Pre-Market Approval, or PMA, application for a companion diagnostic or equivalent application types, may cause delays in the approval or rejection of an application. The FDA and comparable authorities in other countries have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional pre-clinical, clinical or other studies. Our drug candidates could be delayed in receiving, or fail to receive, regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a drug candidate is safe and effective for its proposed indication or a related companion diagnostic is suitable to identify appropriate patient populations;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a drug candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from pre-clinical studies or clinical trials;
- the data collected from clinical trials of our drug candidates may not be sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our drug candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our drugs and related companion diagnostics, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a drug candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that drug candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our drug candidates.

If we experience delays in obtaining approval or if we fail to obtain approval of our drug candidates and related companion diagnostics, the commercial prospects for our drug candidates may be harmed and our ability to generate revenues will be materially impaired.

Our drug candidates may cause undesirable side effects that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

Undesirable side effects caused by our drug candidates could cause us to interrupt, delay or halt pre-clinical studies or could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other regulatory authorities. As is the case

with all oncology drugs, it is likely that there may be side effects associated with the use of our drug candidates. Results of our trials could reveal a high and unacceptable severity and prevalence of these or other side effects. In such an event, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our drug candidates for any or all targeted indications. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Further, our drug candidates could cause undesirable side effects in clinical trials related to on-target toxicity. For example, the FGF19/FGFR4 signaling axis has been shown to play a role in the regulation of de novo bile acid synthesis. Modulation of this signaling axis by treatment with a small molecule FGFR4 inhibitor could lead to the clinical symptoms that were observed with administration of an FGF19 antibody. If on-target toxicity is observed, or if our drug candidates have characteristics that are unexpected, we may need to abandon their development or limit development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in early stage testing for treating cancer have later been found to cause side effects that prevented further development of the compound.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our drug candidates may only be uncovered with a significantly larger number of patients exposed to the drug candidate. If our drug candidates receive marketing approval and we or others identify undesirable side effects caused by such drug candidates (or any other similar drugs) after such approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of such drug candidates;
- regulatory authorities may require the addition of labeling statements, such as a “boxed” warning or a contraindication;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we may be required to change the way such drug candidates are distributed or administered, conduct additional clinical trials or change the labeling of the drug candidates;
- regulatory authorities may require a Risk Evaluation and Mitigation Strategy, or REMS, plan to mitigate risks, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools;
- we may be subject to regulatory investigations and government enforcement actions;
- we may decide to remove such drug candidates from the marketplace;
- we could be sued and held liable for injury caused to individuals exposed to or taking our drug candidates; and
- our reputation may suffer.

We believe that any of these events could prevent us from achieving or maintaining market acceptance of the affected drug candidates and could substantially increase the costs of commercializing our drug candidates, if approved, and significantly impact our ability to successfully commercialize our drug candidates and generate revenues.

A breakthrough therapy designation by the FDA for our drug candidates may not lead to a faster development or regulatory review or approval process, and it does not increase the likelihood that our drug candidates will receive marketing approval.

We may seek a breakthrough therapy designation for some of our drug candidates. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For drugs that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Drugs designated as breakthrough therapies by the FDA are also eligible for accelerated approval.

Designation as a breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe one of our drug candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a breakthrough therapy designation for a drug candidate may not result in a faster development process, review or approval compared to drugs considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our drug candidates qualify as breakthrough therapies, the FDA may later decide that the drugs no longer meet the conditions for qualification.

A fast track designation by the FDA may not actually lead to a faster development or regulatory review or approval process.

In October 2016, the FDA granted fast track designation to BLU-285 for the treatment of patients with unresectable or metastatic GIST that progressed following treatment with imatinib and a second tyrosine kinase inhibitor and for the treatment of patients with unresectable or metastatic GIST with the PDGFRα D842V mutation regardless of prior therapy. We may also seek fast track designation for some of our other drug candidates. If a drug is intended for the treatment of a serious or life-threatening condition and the drug demonstrates the potential to address unmet medical needs for this condition, the drug sponsor may apply for fast track designation. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular drug candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even though we have received fast track designation for BLU-285 for treatment of patients with unresectable or metastatic GIST that progressed following treatment with imatinib and a second tyrosine kinase inhibitor and for the treatment of patients with unresectable or metastatic GIST with the PDGFRα D842V mutation regardless of prior therapy, or even if we receive fast track designation for our other drug candidates, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program.

While we have received orphan drug designation for our lead drug candidates, BLU-285 and BLU-554 for specified indications, we may seek orphan drug designation for some of our other drug candidates. However, we may be unsuccessful in obtaining or may be unable to maintain the benefits associated with orphan drug designation, including the potential for market exclusivity.

In September 2015, the FDA granted orphan drug designation to BLU-554 for the treatment of HCC, and in January 2016, the FDA granted orphan drug designation to BLU-285 for the treatment of GIST and SM. As part of our business strategy, we may seek orphan drug designation for some of our other drug candidates, and we may be unsuccessful. Regulatory authorities in some jurisdictions, including the United States and the European Union, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the United States, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers.

Similarly, in the European Union, the European Commission grants orphan drug designation after receiving the opinion of the European Medicines Agency's, or EMA, Committee for Orphan Medicinal Products on an orphan drug designation application. Orphan drug designation is intended to promote the development of drugs that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions affecting not more than 5 in 10,000 persons in the European Union and for which no satisfactory method of diagnosis, prevention, or treatment has been authorized (or the product would be a significant benefit to those affected). In addition, designation is granted for drugs intended for the diagnosis, prevention, or treatment of a life-threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in the European Union would be sufficient to justify the necessary investment in developing the drug. In the European Union, orphan drug designation entitles a party to financial incentives such as reduction of fees or fee waivers.

Generally, if a drug with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the drug is entitled to a period of marketing exclusivity, which precludes the EMA or the FDA from approving another marketing application for the same drug and indication for that time period, except in limited circumstances. The applicable period is seven years in the United States and ten years in the European Union. The European Union exclusivity period can be reduced to six years if a drug no longer meets the criteria for orphan drug designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified.

Even if we obtain orphan drug exclusivity for a drug, that exclusivity may not effectively protect the designated drug from competition because different drugs can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. In addition, a designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. Moreover, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug to meet the needs of patients with the rare disease or condition. Orphan drug designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process. While we intend to seek orphan drug designation for our other drug candidates in addition to BLU-554 for the treatment of HCC and BLU-285 for the treatment of GIST and SM, we may never receive such designations. Even if we receive orphan drug designation for any of our drug candidates, there is no guarantee that we will enjoy the benefits of those designations.

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

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

- restrictions on the marketing or manufacturing of the drug, withdrawal of the drug from the market, or voluntary drug recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of marketing approvals;

- drug seizure or detention, or refusal to permit the import or export of drugs; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our drug candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

We may not be successful in our efforts to use and expand our development platform to build a pipeline of drug candidates.

A key element of our strategy is to use our novel target discovery engine to identify kinases that are drivers of diseases in genomically defined patient populations with high unmet medical need in order to build a pipeline of drug candidates. Although our research and development efforts to date have resulted in a pipeline of drug candidates, we may not be able to continue to identify novel kinase drivers and develop drug candidates. Even if we are successful in continuing to build our pipeline, the potential drug candidates that we identify may not be suitable for clinical development. For example, they may be shown to have harmful side effects or other characteristics that indicate that they are unlikely to be drugs that will receive marketing approval and achieve market acceptance. If we do not successfully develop and commercialize drug candidates based upon our approach, we will not be able to obtain drug revenues in future periods, which likely would result in significant harm to our financial position and adversely affect our stock price.

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

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

Risks Related to Commercialization

The incidence and prevalence for target patient populations of our drug candidates have not been established with precision. If the market opportunities for our drug candidates are smaller than we estimate or if any approval that we obtain is based on a narrower definition of the patient population, our revenue and ability to achieve profitability will be adversely affected, possibly materially.

The precise incidence and prevalence for SM, GIST and HCC are unknown. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our drug candidates, are based on estimates. We estimate that there are approximately: (i) 4,300 addressable patients with advanced forms of SM, including smoldering SM, and approximately 16,000 addressable patients with indolent SM in the United States, France, Germany, Italy, Spain, the United Kingdom and Japan, or the Major Markets; (ii) 500 addressable patients with PDGFRα D842V-driven, unresectable or metastatic GIST in the Major Markets and approximately 20,000 addressable patients in the Major Markets with unresectable or metastatic frontline GIST; and (iii) 18,000 first line and 6,000 second line addressable HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 overexpression in the Major Markets.

The total addressable market opportunity for BLU-285 for the treatment of patients with SM and GIST and BLU-554 for the treatment of HCC patients with aberrantly active FGFR4 signaling will ultimately depend upon, among other things, the diagnosis criteria included in the final label for each of BLU-285 and BLU-554, if our drug candidates

are approved for sale for these indications, acceptance by the medical community and patient access, drug pricing and reimbursement. The number of patients in the Major Markets and elsewhere may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our drugs, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than we do.

The development and commercialization of new drugs is highly competitive. We face competition with respect to our current drug candidates, and will face competition with respect to any drug candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. There are a number of large pharmaceutical and biotechnology companies that currently market and sell drugs or are pursuing the development of therapies in the field of kinase inhibition for cancer and other diseases. Some of these competitive drugs and therapies are based on scientific approaches that are the same as or similar to our approach, and others are based on entirely different approaches. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

Specifically, there are a large number of companies developing or marketing treatments for cancer, including many major pharmaceutical and biotechnology companies. If BLU-285 receives marketing approval for advanced SM, GIST and/or for GIST patients with the PDGFRα D842V mutation, it may face competition from other drug candidates in development for these indications, including drug candidates in development by AB Science S.A., AROG Pharmaceuticals, Inc., ARIAD Pharmaceuticals, Inc., Deciphera Pharmaceuticals, LLC, Kolltan Pharmaceuticals, Inc., Novartis AG and Plexxikon Inc., a wholly-owned subsidiary of Daiichi Sankyo Company, Limited. Further, if BLU-554 receives marketing approval for patients with HCC with FGF19 overexpression, it will face competition from sorafenib, the only approved systemic medical therapy for HCC. In addition, BLU-554 may face competition from other drug candidates in development by AstraZeneca plc, Bayer AG, Celgene Corporation, Eisai Inc., H3 Biomedicine Inc., Johnson & Johnson, Novartis AG, Sanofi S.A., Taiho Pharmaceutical Co., Ltd. and Xoma Ltd. If BLU-667 receives marketing approval for patients with RET or mutations, it may face competition from other drug candidates in development, including drug candidates in development by ARIAD Pharmaceuticals, Inc., AstraZeneca plc, Eisai Inc., Exelixis, Inc., GlaxoSmithKline plc, Ignyta, Inc., Loxo Oncology, Inc., Mirati Therapeutics, Inc., Novartis AG, Pfizer Inc. and Roche.

Many of the companies against which we are competing or against which we may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, pre-clinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved drugs than we do. Mergers and acquisitions in the pharmaceutical, biotechnology and diagnostic industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize drugs that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any drugs that we or our collaborators may develop. Our competitors also may obtain FDA or other regulatory approval for their drugs more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we or our collaborators are able to enter the market. The key competitive factors affecting the success of all of our drug candidates, if approved, are likely to be their efficacy, safety, convenience, price, the effectiveness of companion diagnostics in guiding the use of related drugs, the level of generic competition and the availability of reimbursement from government and other third-party payors.

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

We will face an inherent risk of product liability exposure related to the testing of our drug candidates in human clinical trials and will face an even greater risk if we commercially sell any drug candidates that we may develop. If we

cannot successfully defend ourselves against claims that our drug candidates caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any drug candidates that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize any drug candidates that we may develop.

Although we maintain product liability insurance coverage, it may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage when we begin later-stage clinical trials and if we successfully commercialize any drug candidate. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

If we or our collaborators, including Ventana and Qiagen, are unable to successfully develop and commercialize companion diagnostics for our drug candidates, or experience significant delays in doing so we may not realize the full commercial potential of our drug candidates.

Because we are focused on precision medicine, in which predictive biomarkers will be used to identify the right patients for our drug candidates, we believe that our success may depend, in part, on the development and commercialization of companion diagnostics. There has been limited success to date industrywide in developing and commercializing these types of companion diagnostics. To be successful, we need to address a number of scientific, technical and logistical challenges. We have entered into an agreement with Ventana to develop and commercialize a companion diagnostic for BLU-554 in order to identify HCC patients with aberrantly active FGFR4 signaling as indicated by FGF19 overexpression, and we have entered into an agreement with Qiagen to develop and commercialize a companion diagnostic for BLU-285 in order to identify GIST patients with the PDGFRα D842V mutation. However, we have not yet initiated development and commercialization of these companion diagnostics or companion diagnostics for any of our other programs. We have little experience in the development and commercialization of companion diagnostics and may not be successful in developing and commercializing appropriate companion diagnostics to pair with any of our drug candidates that receive marketing approval. Companion diagnostics are subject to regulation by the FDA and similar regulatory authorities outside the United States as medical devices and require separate regulatory approval prior to commercialization. Given our limited experience in developing and commercializing companion diagnostics, we expect to rely on Ventana and Qiagen to design, manufacture, obtain regulatory approval for and commercialize the companion diagnostics for BLU-554 and BLU-285, respectively, and we expect to rely in whole or in part on other third parties to design, manufacture, obtain regulatory approval for and commercialize any other companion diagnostics for our drug candidates. We and our collaborators, including Ventana and Qiagen, may encounter difficulties in developing and obtaining approval for the companion diagnostics, including issues relating to selectivity/specificity, analytical validation, reproducibility, or clinical validation. In addition, our collaborators for any companion diagnostic that we may seek to develop, our collaborators, including Ventana and Qiagen:

- may not perform their respective obligations as expected or as required under our agreements with them;
- may not pursue commercialization of a companion diagnostic test even if it receives any required regulatory approvals;

- may elect not to continue the development of a companion diagnostic test based on changes in their or other third parties' strategic focus or available funding, or external factors such as an acquisition, that divert resources or create competing priorities;

- may not commit sufficient resources to the marketing and distribution of the a companion diagnostic test; and

- may terminate their relationship with us.

Any delay or failure by us or our collaborators, including Ventana, to develop or obtain regulatory approval of the companion diagnostics could delay or prevent approval of our drug candidates. If we, or any third parties that we engage to assist us, including Ventana, are unable to successfully develop and commercialize companion diagnostics for our drug candidates, or experience delays in doing so:

- the development of our drug candidates may be adversely affected if we are unable to appropriately select patients for enrollment in our clinical trials;

- our drug candidates may not receive marketing approval if safe and effective use of a therapeutic drug candidate depends on an *in vitro* diagnostic; and

- we may not realize the full commercial potential of any drug candidates that receive marketing approval if, among other reasons, we are unable to appropriately select patients who are likely to benefit from therapy with our drugs.

As a result, our business would be harmed, possibly materially.

In addition, third party collaborators, including Ventana and Qiagen, may encounter production difficulties that could constrain the supply of the companion diagnostics, and both they and we may have difficulties gaining acceptance of the use of the companion diagnostics in the clinical community. If such companion diagnostics fail to gain market acceptance, it would have an adverse effect on our ability to derive revenues from sales of our drug candidates, if approved. In addition, the diagnostic company with whom we contract may decide to discontinue selling or manufacturing the companion diagnostic that we anticipate using in connection with development and commercialization of our drug candidates or our relationship with such diagnostic company may otherwise terminate. We may not be able to enter into arrangements with another diagnostic company to obtain supplies of an alternative diagnostic test for use in connection with the development and commercialization of our drug candidates or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of our drug candidates.

Even if we are able to commercialize any drug candidates, such drugs may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which would harm our business.

The regulations that govern regulatory approvals, pricing and reimbursement for new drugs vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a drug candidate in a particular country, but then be subject to price regulations that delay our commercial launch of the drug candidate, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the drug candidate in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more drug candidates, even if our drug candidates obtain marketing approval.

Our ability to commercialize any drug candidates successfully also will depend in part on the extent to which coverage and reimbursement for these drug candidates and related treatments will be available from government authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government

authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular drugs. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for drugs. We cannot be sure that coverage will be available for any drug candidate that we commercialize and, if coverage is available, the level of reimbursement. Reimbursement may impact the demand for, or the price of, any drug candidate for which we obtain marketing approval. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any drug candidate for which we obtain marketing approval.

There may be significant delays in obtaining reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that any drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable payment rates from both government-funded and private payors for any approved drugs that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize drugs and our overall financial condition.

Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or the Affordable Care Act, was passed, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act, among other things, subjects biologic products to potential competition by lower-cost biosimilars, addresses a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of certain branded prescription drugs, and a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D.

In addition, other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation’s automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2024 unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, the Middle Class Tax Relief and Job Creation Act of 2012 required that the Centers for Medicare & Medicaid Services, the agency responsible for administering the Medicare program, or CMS, reduce the Medicare clinical laboratory fee schedule by 2% in 2013, which served as a base for 2014 and subsequent years. In addition, effective January 1, 2014, CMS also began bundling the Medicare payments for certain laboratory tests ordered while a patient received services in a hospital outpatient setting. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments

will pay for healthcare products and services, which could result in reduced demand for our drug candidates or companion diagnostics or additional pricing pressures.

If, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market our drug candidates, we may not be successful in commercializing our drug candidates if and when they are approved, and we may not be able to generate any revenue.

We do not currently have a sales or marketing infrastructure and have limited experience in the sale, marketing or distribution of drugs. To achieve commercial success for any approved drug candidate for which we retain sales and marketing responsibilities, we must build our sales, marketing, managerial, and other non-technical capabilities or make arrangements with third parties to perform these services. In the future, we may choose to build a focused sales and marketing infrastructure to sell, or participate in sales activities with our collaborators for, some of our drug candidates if and when they are approved.

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

Factors that may inhibit our efforts to commercialize our drug candidates on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future drugs;
- the lack of complementary drugs to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we enter into arrangements with third parties to perform sales, marketing and distribution services, our drug revenues or the profitability of these drug revenues to us are likely to be lower than if we were to market and sell any drug candidates that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our drug candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our drug candidates effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our drug candidates. Further, our business, results of operations, financial condition and prospects will be materially adversely affected.

Our relationships with customers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, exclusion from government healthcare programs, contractual damages, reputational harm and diminished profits and future earnings.

Although we do not currently have any drugs on the market, once we begin commercializing our drug candidates, we will be subject to additional healthcare statutory and regulatory requirements and enforcement by the federal government and the states and foreign governments in which we conduct our business. Healthcare providers, physicians and third-party payors play a primary role in the recommendation and prescription of any drug candidates for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute our drug candidates for which we obtain

marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- the federal Anti-Kickback Statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the federal False Claims Act imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the federal physician payment transparency requirements, sometimes referred to as the “Sunshine Act” under the Affordable Care Act require manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children’s Health Insurance Program to report to the Department of Health and Human Services information related to physician payments and other transfers of value and the ownership and investment interests of such physicians and their immediate family members;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 and its implementing regulations, which also imposes obligations on certain covered entity healthcare providers, health plans, and healthcare clearinghouses as well as their business associates that perform certain services involving the use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information; and

- analogous state laws and regulations, such as state anti-kickback and false claims laws that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; and some state laws require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Ensuring that our future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations, including anticipated activities to be conducted by our sales team, were to be found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

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

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

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

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

Governments outside the United States tend to impose strict price controls, which may adversely affect our revenues, if any.

In some countries, particularly countries in the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a drug. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our drug candidate to other available therapies. If reimbursement of our drugs is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be materially harmed. In addition, the recent United Kingdom referendum on its membership in the European Union resulted in a majority of United Kingdom voters voting to exit the European Union, often referred to as Brexit. Brexit has already and may continue to adversely affect European and/or worldwide regulatory conditions. Brexit could lead to legal uncertainty and potentially divergent national laws and regulations, including those related to the pricing of prescription pharmaceuticals, as the United Kingdom determines which European Union laws to replicate or replace. If the United Kingdom were to significantly alter its regulations affecting

the pricing of prescription pharmaceuticals, we could face significant new costs. As a result, Brexit could impair our ability to transact business in the European Union and the United Kingdom.

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

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

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

Risks Related to Our Dependence on Third Parties

We may seek to establish additional collaborations, and, if we are not able to establish them on commercially reasonable terms, we may have to alter our development and commercialization plans.

Our drug development programs and the potential commercialization of our drug candidates will require substantial additional cash to fund expenses. For some of our drug candidates, we may decide to collaborate with additional pharmaceutical and biotechnology companies for the development and potential commercialization of those drug candidates.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject drug candidate, the costs and complexities of manufacturing and delivering such drug candidate to patients, the potential of competing drugs, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative drug candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our drug candidate. The terms of any additional collaborations or other arrangements that we may establish may not be favorable to us.

We may also be restricted under existing collaboration agreements from entering into future agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate additional collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the drug candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our drug candidates or bring them to market and generate drug revenue.

In addition, our collaborations with Alexion and Roche, as well as any future collaborations that we enter into, may not be successful. The success of our collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Collaborators generally have significant discretion in determining the efforts and resources that they will apply to these collaborations. Disagreements between parties to a collaboration arrangement regarding clinical development and commercialization matters can lead to delays in the development process or commercializing the applicable drug candidate and, in some cases, termination of the collaboration arrangement. These disagreements can be difficult to resolve if neither of the parties has final decision-making authority. Collaborations with pharmaceutical or biotechnology companies and other third parties often are terminated or allowed to expire by the other party. Any such termination or expiration would adversely affect us financially and could harm our business reputation.

We rely on third parties to conduct our clinical trials for our drug candidates. If these third parties do not successfully carry out their contractual duties, comply with regulatory requirements or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our drug candidates and our business could be substantially harmed.

We do not have the ability to independently conduct clinical trials. We rely on medical institutions, clinical investigators, CROs, contract laboratories and other third parties to conduct or otherwise support clinical trials for our drug candidates. We rely heavily on these parties for execution of clinical trials for our drug candidates and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards, and our reliance on CROs will not relieve us of our regulatory responsibilities. For any violations of laws and regulations during the conduct of our clinical trials, we could be subject to warning letters or enforcement action that may include civil penalties up to and including criminal prosecution.

We and our CROs are required to comply with regulations, including GCPs, for conducting, monitoring, recording and reporting the results of clinical trials to ensure that the data and results are scientifically credible and accurate, and that the trial patients are adequately informed of the potential risks of participating in clinical trials and their rights are protected. These regulations are enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area and comparable foreign regulatory authorities for any drugs in clinical development. The FDA enforces GCP regulations through periodic inspections of clinical trial sponsors, principal investigators and trial sites. If we or our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, the FDA will determine that our current or future clinical trials comply with GCPs. In addition, our clinical trials must be conducted with drug candidates produced under cGMPs regulations. Our failure or the failure of our CROs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Although we intend to design the clinical trials for our drug candidates, CROs will conduct all of the clinical trials. As a result, many important aspects of our development programs, including their conduct and timing, will be outside of our direct control. Our reliance on third parties to conduct current or future clinical trials will also result in less direct control over the management of data developed through clinical trials than would be the case if we were relying entirely upon our own staff. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

- have staffing difficulties;
- fail to comply with contractual obligations;
- experience regulatory compliance issues;
- undergo changes in priorities or become financially distressed; or
- form relationships with other entities, some of which may be our competitors.

These factors may materially adversely affect the willingness or ability of third parties to conduct our clinical trials and may subject us to unexpected cost increases that are beyond our control. If the CROs do not perform clinical trials in a satisfactory manner, breach their obligations to us or fail to comply with regulatory requirements, the development, regulatory approval and commercialization of our drug candidates may be delayed, we may not be able to obtain regulatory approval and commercialize our drug candidates, or our development program materially and irreversibly harmed. If we are unable to rely on clinical data collected by our CROs, we could be required to repeat, extend the duration of, or increase the size of any clinical trials we conduct and this could significantly delay commercialization and require significantly greater expenditures.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, any clinical trials such CROs are associated with may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for or successfully commercialize our drug candidates. As a result, we believe that our financial results and the commercial prospects for our drug candidates in the subject indication would be harmed, our costs could increase and our ability to generate revenue could be delayed.

We contract with third parties for the manufacture of our drug candidates for pre-clinical development and clinical trials, and we expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our drug candidates or drugs or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not currently own or operate, nor do we have any plans to establish in the future, any manufacturing facilities or personnel. We rely, and expect to continue to rely, on third parties for the manufacture of our drug candidates for pre-clinical development and clinical testing, as well as for the commercial manufacture of our drugs if any of our drug candidates receive marketing approval. This reliance on third parties increases the risk that we will not have sufficient quantities of our drug candidates or drugs or such quantities at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts.

The facilities used by our contract manufacturers to manufacture our drug candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit our marketing applications to the FDA. We do not control the manufacturing process of, and will be completely dependent on, our contract manufacturers for compliance with cGMPs in connection with the manufacture of our drug candidates. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our drug candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our drug candidates, if approved. Further, our failure, or the failure of our third party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of drug candidates or drugs, if approved, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect our business and supplies of our drug candidates.

We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third party manufacturers, reliance on third party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and

· the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Our drug candidates and any drugs that we may develop may compete with other drug candidates and approved drugs for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers. Although we believe that there are several potential alternative manufacturers who could manufacture our drug candidates, we may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of our drug candidates or drugs may adversely affect our future profit margins and our ability to commercialize any drugs that receive marketing approval on a timely and competitive basis.

The third parties upon whom we rely for the supply of the active pharmaceutical ingredient, drug product and drug substance used in our lead drug candidates are our sole source of supply, and the loss of any of these suppliers could significantly harm our business.

The active pharmaceutical ingredients, or API, drug product and drug substance used in our lead drug candidates are supplied to us from single-source suppliers. Our ability to successfully develop our drug candidates, and to ultimately supply our commercial drugs in quantities sufficient to meet the market demand, depends in part on our ability to obtain the API, drug product and drug substance for these drugs in accordance with regulatory requirements and in sufficient quantities for commercialization and clinical testing. We do not currently have arrangements in place for a redundant or second-source supply of any such API, drug product or drug substance in the event any of our current suppliers of such API, drug product and drug substance cease their operations for any reason.

For all of our drug candidates, we intend to identify and qualify additional manufacturers to provide such API, drug product and drug substance prior to submission of an NDA to the FDA and/or an MAA to the EMA. We are not certain, however, that our single-source suppliers will be able to meet our demand for their products, either because of the nature of our agreements with those suppliers, our limited experience with those suppliers or our relative importance as a customer to those suppliers. It may be difficult for us to assess their ability to timely meet our demand in the future based on past performance. While our suppliers have generally met our demand for their products on a timely basis in the past, they may subordinate our needs in the future to their other customers.

Establishing additional or replacement suppliers for the API, drug product and drug substance used in our drug candidates, if required, may not be accomplished quickly. If we are able to find a replacement supplier, such replacement supplier would need to be qualified and may require additional regulatory approval, which could result in further delay. While we seek to maintain adequate inventory of the API, drug product and drug substance used in our drug candidates, any interruption or delay in the supply of components or materials, or our inability to obtain such API, drug product and drug substance from alternate sources at acceptable prices in a timely manner could impede, delay, limit or prevent our development efforts, which could harm our business, results of operations, financial condition and prospects.

Risks Related to Intellectual Property

If we are unable to adequately protect our proprietary technology or obtain and maintain patent protection for our technology and drugs or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and drugs similar or identical to ours, and our ability to successfully commercialize our technology and drugs may be impaired.

Our commercial success depends in part on our ability to obtain and maintain proprietary or intellectual property protection in the United States and other countries for our drug candidates, including BLU-285 and BLU-554, and our core technologies, including our novel target discovery engine and our proprietary compound library and other know-how. We seek to protect our proprietary and intellectual property position by, among other methods, filing patent applications in the United States and abroad related to our proprietary technology, inventions and improvements that are

important to the development and implementation of our business. We also rely on trade secrets, know-how and continuing technological innovation to develop and maintain our proprietary and intellectual property position.

We own patents and patent applications that relate to BLU-285 and BLU-554 as composition of matter. We also own applications relating to composition of matter for KIT Exon 17 inhibitors with different compound families, composition of matter for FGFR4 inhibitors with multiple compound families, composition of matter for inhibitors of the predicted RET resistant mutants, composition of matter for inhibitors of predicted NTRK resistant mutants, composition of matter for inhibitors of a rare genetic disease target, as well as methods of use for these novel compounds. The issued patent directed to BLU-554 composition of matter has a statutory expiration date in 2033, the issued patent directed to BLU-285 composition of matter has a statutory expiration date in 2034 and any patents issuing from our pending patent applications are projected to expire between 2034 and 2037.

As of October 31, 2016, we owned two issued U.S. patents, six pending U.S. patent applications, 28 pending foreign patent applications in a number of jurisdictions, including Australia, Argentina, Brazil, Bolivia, Canada, China, the European Union, Hong Kong, Israel, India, Iraq, Japan, Lebanon, Mexico, New Zealand, Pakistan, Paraguay, Philippines, Russia, Singapore, South Africa, South Korea, Taiwan, Uruguay and Venezuela, and two pending Patent Cooperation Treaty, or PCT, patent applications directed to our KIT program, including BLU-285. Any U.S. or ex-U.S. patents issuing from the pending applications covering BLU-285 will have a statutory expiration date of October 2034. Patent term adjustments or patent term extensions could result in later expiration dates.

As of October 31, 2016, we owned four issued U.S. patents, five pending U.S. patent applications and 45 foreign patent applications in a number of jurisdictions, including Argentina, Australia, Bolivia, Brazil, Canada, China, Egypt, the European Union, Hong Kong, Israel, India, Indonesia, Iraq, Japan, South Korea, Lebanon, Mexico New Zealand, Pakistan, Paraguay, Philippines, Russia, Singapore, South Africa, Taiwan, Thailand, Uruguay and Venezuela, directed to our FGFR4 program, including BLU-554. Any U.S. or ex-U.S. patent issuing from the pending applications covering BLU-554 will have a statutory expiration date of July 2033, December 2033, or October 2034. Patent term adjustments or patent term extensions could result in later expiration dates.

As of October 31, 2016, we owned one PCT application and five provisional U.S. patent applications directed to our RET program, which, if issued, will have statutory expiration dates of 2036 or 2037. As of October 31, 2016, we owned two U.S. patent applications, including one provisional U.S. patent application, two foreign patent applications in Argentina and Taiwan, and one PCT application directed to NTRK, which, if issued, will have statutory expiration dates of 2036. As of October 31, 2016, we owned two provisional U.S. patent applications directed to a rare genetic disease target which, if issued, will have a statutory expiration date of 2037.

The intellectual property portfolio directed to our platform includes patent applications directed to novel gene fusions and the uses of these fusions for detecting and treating conditions implicated with these fusions. As of October 31, 2016, we owned four U.S. patent applications, four European Union patent applications and six pending PCT patent applications directed to this technology, which, if issued, will have statutory expiration dates ranging from 2034 to 2035.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation.

The degree of patent protection we require to successfully commercialize our drug candidates may be unavailable or severely limited in some cases and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We cannot provide any assurances that any of our patents have, or that any of our pending patent applications that mature into issued patents will include, claims with a scope sufficient to protect BLU-285, BLU-554 or our other drug candidates. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Furthermore, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally twenty years after it is filed. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new drug candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with adequate and continuing patent protection sufficient to exclude others from commercializing drugs similar or identical to our drug candidates, including generic versions of such drugs.

Other parties have developed technologies that may be related or competitive to our own, and such parties may have filed or may file patent applications, or may have received or may receive patents, claiming inventions that may overlap or conflict with those claimed in our own patent applications or issued patents, with respect to either the same methods or formulations or the same subject matter, in either case, that we may rely upon to dominate our patent position in the market. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights cannot be predicted with any certainty. For example, we are aware of a U.S. patent owned by a third party that has generic composition of matter claims that cover BLU-554. If the claims of this third party patent are asserted against us, we do not believe BLU-554 or our proposed activities related to BLU-554 would be found to infringe any valid claim of this patent. While we may decide to initiate proceedings to challenge the validity of this patent in the future, we may be unsuccessful, and courts or patent offices in the United States and abroad could uphold the validity of any such patent. If we were to challenge the validity of any issued United States patent in court, we would need to overcome a statutory presumption of validity that attaches to every United States patent. This means that in order to prevail, we would have to present clear and convincing evidence as to the invalidity of the patent's claims.

In addition, the patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. Further, with respect to most of the pending patent applications covering our drug candidates, prosecution has yet to commence. Patent prosecution is a lengthy process, during which the scope of the claims initially submitted for examination by the U.S. Patent and Trademark Office, or USPTO, have been significantly narrowed by the time they issue, if at all. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we do not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

Even if we acquire patent protection that we expect should enable us to maintain such competitive advantage, third parties may challenge the validity, enforceability or scope thereof, which may result in such patents being narrowed, invalidated or held unenforceable. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. For example, we may be subject to a third-party submission of prior art to the USPTO challenging the priority of an invention claimed within one of our patents, which submissions may also be made prior to a patent's issuance, precluding the granting of any of our pending patent applications. We may become involved in opposition, derivation, reexamination, inter partes review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others from whom we have obtained licenses to such rights. Competitors may claim that they invented the inventions claimed in our issued patents or patent applications prior to us, or may file patent applications before we do. Competitors may also claim that we are infringing on their patents and that we therefore cannot practice our technology as claimed under our patents, if issued. Competitors may also contest our patents, if issued, by showing the patent examiner that the invention was not original, was not novel or was obvious. In litigation, a competitor could claim that our patents, if issued, are not valid for a number of reasons. If a court agrees, we would lose our rights to those challenged patents.

In addition, we may in the future be subject to claims by our former employees or consultants asserting an ownership right in our patents or patent applications, as a result of the work they performed on our behalf. Although we generally require all of our employees, consultants and advisors and any other third parties who have access to our proprietary know-how, information or technology to assign or grant similar rights to their inventions to us, we cannot be certain that we have executed such agreements with all parties who may have contributed to our intellectual property, nor can we be certain that our agreements with such parties will be upheld in the face of a potential challenge, or that they will not be breached, for which we may not have an adequate remedy.

An adverse determination in any such submission or proceeding may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and drugs, without payment to us, or

could limit the duration of the patent protection covering our technology and drug candidates. Such challenges may also result in our inability to manufacture or commercialize our drug candidates without infringing third party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future drug candidates.

Even if they are unchallenged, our issued patents and our pending patents, if issued, may not provide us with any meaningful protection or prevent competitors from designing around our patent claims to circumvent our owned or licensed patents by developing similar or alternative technologies or drugs in a non-infringing manner. For example, a third party may develop a competitive drug that provides benefits similar to one or more of our drug candidates but that has a different composition that falls outside the scope of our patent protection. If the patent protection provided by the patents and patent applications we hold or pursue with respect to our drug candidates is not sufficiently broad to impede such competition, our ability to successfully commercialize our drug candidates could be negatively affected, which would harm our business.

Third parties may initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability and the ability of our collaborators to develop, manufacture, market and sell our drug candidates and use our proprietary technologies without infringing the proprietary rights and intellectual property of third parties. The biotechnology and pharmaceutical industries are characterized by extensive and frequent litigation regarding patents and other intellectual property rights. We may in the future become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our drug candidates and technology, including interference proceedings before the USPTO. Our competitors or other third parties may assert infringement claims against us, alleging that our drugs are covered by their patents. Given the vast number of patents in our field of technology, we cannot be certain that we do not infringe existing patents or that we will not infringe patents that may be granted in the future. Many companies have filed, and continue to file, patent applications related to kinase inhibitors. Some of these patent applications have already been allowed or issued, and others may issue in the future. For example, we are aware of a U.S. patent owned by a third party that has generic composition of matter claims that cover BLU-554. If the claims of this third party patent are asserted against us, we do not believe BLU-554 or our proposed activities related to BLU-554 would be found to infringe any valid claim of this patent. While we may decide to initiate proceedings to challenge the validity of this patent in the future, we may be unsuccessful, and courts or patent offices in the United States and abroad could uphold the validity of any such patent. If we were to challenge the validity of any issued United States patent in court, we would need to overcome a statutory presumption of validity that attaches to every United States patent. This means that in order to prevail, we would have to present clear and convincing evidence as to the invalidity of the patent's claims.

Since this area is competitive and of strong interest to pharmaceutical and biotechnology companies, there will likely be additional patent applications filed and additional patents granted in the future, as well as additional research and development programs expected in the future. Furthermore, because patent applications can take many years to issue and may be confidential for 18 months or more after filing, and because pending patent claims can be revised before issuance, there may be applications now pending which may later result in issued patents that may be infringed by the manufacture, use or sale of our drug candidates. If a patent holder believes our drug or drug candidate infringes on its patent, the patent holder may sue us even if we have received patent protection for our technology. Moreover, we may face patent infringement claims from non-practicing entities that have no relevant drug revenue and against whom our own patent portfolio may thus have no deterrent effect.

If we are found to infringe a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing and marketing our drug candidates and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain such a license, it could be granted on non-exclusive terms, thereby providing our competitors and other third parties access to the same technologies licensed to us. Without such a license, we could be forced, including by court order, to cease developing and commercializing the infringing technology or drug candidates. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed such third-party patent rights. A finding of infringement could prevent us from commercializing our drug candidates or force us to cease some of our business operations, which could materially harm our business.

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

Competitors and other third parties may infringe, misappropriate or otherwise violate our patents and other intellectual property rights. To counter infringement or unauthorized use, we may be required to file infringement claims. A court may disagree with our allegations, however, and may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the third-party technology in question. Further, such third parties could counterclaim that we infringe their intellectual property or that a patent we have asserted against them is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims challenging the validity, enforceability or scope of asserted patents are commonplace. In addition, third parties may initiate legal proceedings against us to assert such challenges to our intellectual property rights. The outcome of any such proceeding is generally unpredictable. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Patents may be unenforceable if someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. It is possible that prior art of which we and the patent examiner were unaware during prosecution exists, which could render our patents invalid. Moreover, it is also possible that prior art may exist that we are aware of but do not believe is relevant to our current or future patents, but that could nevertheless be determined to render our patents invalid.

An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly. If a defendant were to prevail on a legal assertion of invalidity or unenforceability of our patents covering one of our drug candidates, we would lose at least part, and perhaps all, of the patent protection covering such drug candidate. Competing drugs may also be sold in other countries in which our patent coverage might not exist or be as strong. If we lose a foreign patent lawsuit, alleging our infringement of a competitor's patents, we could be prevented from marketing our drugs in one or more foreign countries. Any of these outcomes would have a materially adverse effect on our business.

Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities.

We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating or from successfully challenging our intellectual property rights. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

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

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In addition, periodic maintenance fees on issued patents often must be paid to the USPTO and foreign patent agencies over the lifetime of the patent. While an unintentional lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or

lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our drugs or procedures, we may not be able to stop a competitor from marketing drugs that are the same as or similar to our drug candidates, which would have a material adverse effect on our business.

We may not be able to effectively enforce our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on our drug candidates in all countries throughout the world would be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly in developing countries. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. In addition, the patent laws of some foreign countries do not afford intellectual property protection to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of some countries, particularly developing countries, do not favor the enforcement of patents and other intellectual property rights. This could make it difficult for us to stop the infringement of our patents or the misappropriation of our other intellectual property rights. For example, many foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own drugs and, further, may export otherwise infringing drugs to territories where we have patent protection, if our ability to enforce our patents to stop infringing activities is inadequate. These drugs may compete with our drug candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and resources from other aspects of our business. Furthermore, while we intend to protect our intellectual property rights in the major markets for our drug candidates, we cannot ensure that we will be able to initiate or maintain similar efforts in all jurisdictions in which we may wish to market our drug candidates. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate.

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

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Recent patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or Leahy-Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. In addition, the Leahy-Smith Act has transformed the U.S. patent system into a “first to file” system. The first-to-file provisions, however, only became effective on March 16, 2013. Accordingly, it is not yet clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could make it more difficult to obtain patent protection for our inventions and increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could harm our business, results of operations and financial condition.

The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. In addition, there have been recent proposals for additional changes to the patent laws of the United States and other countries that, if adopted, could impact our ability to obtain patent protection for our proprietary technology or our ability to enforce our proprietary technology. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

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

In addition to the protection afforded by patents, we rely upon unpatented trade secret protection, unpatented know-how and continuing technological innovation to develop and maintain our competitive position. With respect to the building of our proprietary compound library, we consider trade secrets and know-how to be our primary intellectual property. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our collaborators, scientific advisors, employees and consultants, and invention assignment agreements with our consultants and employees. We may not be able to prevent the unauthorized disclosure or use of our technical know-how or other trade secrets by the parties to these agreements, however, despite the existence generally of confidentiality agreements and other contractual restrictions. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. If any of the collaborators, scientific advisors, employees and consultants who are parties to these agreements breaches or violates the terms of any of these agreements, we may not have adequate remedies for any such breach or violation, and we could lose our trade secrets as a result. Enforcing a claim that a third party illegally obtained and is using our trade secrets, like patent litigation, is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing to protect trade secrets.

Our trade secrets could otherwise become known or be independently discovered by our competitors. Competitors could purchase our drug candidates and attempt to replicate some or all of the competitive advantages we derive from our development efforts, willfully infringe our intellectual property rights, design around our protected technology or develop their own competitive technologies that fall outside of our intellectual property rights. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If our trade secrets are not adequately protected so as to protect our market against competitors' drugs, our competitive position could be adversely affected, as could our business.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of our competitors or are in breach of non-competition or non-solicitation agreements with our competitors.

We could in the future be subject to claims that we or our employees have inadvertently or otherwise used or disclosed alleged trade secrets or other proprietary information of former employers or competitors. Although we try to ensure that our employees and consultants do not use the intellectual property, proprietary information, know-how or trade secrets of others in their work for us, we may in the future be subject to claims that we caused an employee to breach the terms of his or her non-competition or non-solicitation agreement, or that we or these individuals have, inadvertently or otherwise, used or disclosed the alleged trade secrets or other proprietary information of a former employer or competitor. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and could be a distraction to management. If our defenses to these claims fail, in addition to requiring us to pay monetary damages, a court could prohibit us from using technologies or features that are essential to our drug candidates, if such technologies or features are found to incorporate or be derived from the trade secrets or other proprietary information of the former employers. An inability to incorporate such technologies or features would have a material adverse effect on our business, and may prevent us from successfully commercializing our drug candidates. In addition, we may lose valuable intellectual property rights or personnel as a result of such claims. Moreover, any such litigation or the threat thereof may adversely affect our ability to hire employees or contract with independent sales representatives. A loss of key personnel or their work product could hamper or prevent our ability to commercialize our drug candidates, which would have an adverse effect on our business, results of operations and financial condition.

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

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

We are highly dependent on the research and development, clinical, business development, financial and legal expertise of Jeffrey W. Albers, our President and Chief Executive Officer, Anthony L. Boral, our Chief Medical Officer,

Christoph Lengauer, our Chief Scientific Officer, Kathryn Haviland, our Chief Business Officer, Michael Landsittel, our Vice President of Finance, and Tracey McCain, our Chief Legal Officer, as well as the other principal members of our management, scientific and clinical team. Although we have entered into employment agreements with our executive officers, other than Mr. Landsittel, each of our executive officers may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other employees. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We expect to continue hiring qualified development personnel. Recruiting and retaining qualified scientific, clinical, manufacturing and sales and marketing personnel will be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing key employees and executive officers may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize drugs. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. Failure to succeed in clinical trials may make it more challenging to recruit and retain qualified scientific personnel.

We will need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

As of October 31, 2016, we had 99 full-time employees, and in connection with operating as a public company, we expect to increase our number of employees and the scope of our operations. To manage our anticipated development and expansion, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Also, our management may need to divert a disproportionate amount of its attention away from its day-to-day activities and devote a substantial amount of time to managing these development activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of our drug candidates. If our management is unable to effectively manage our expected development and expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our drug candidates, if approved, and compete effectively will depend, in part, on our ability to effectively manage the future development and expansion of our company.

Unfavorable global economic conditions could adversely affect our business, financial condition or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. For example, the global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, such as the global financial crisis, could result in a variety of risks to our business, including, weakened demand for our drug candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. In addition, Brexit has already and may continue to adversely affect European and/or worldwide economic or market, political or regulatory conditions and may contribute to instability in the global financial markets, political institutions and regulatory agencies. The long-term impact of Brexit, including on our business and our industry, will depend on the terms that are negotiated in relation to the United Kingdom's future relationship with the European Union. Any of the foregoing could harm our

business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

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

Earthquakes or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which, could have a material adverse effect on our business.

Our internal computer systems, or those of our third-party CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our drug candidates' development programs.

Despite the implementation of security measures, our internal computer systems and those of our third-party CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our programs. For example, the loss of clinical trial data for our drug candidates could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or drug candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our drug candidates could be delayed.

Our employees, principal investigators, CROs and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk that our employees, principal investigators, CROs and consultants may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violate the regulations of the FDA and other regulatory authorities, including those laws requiring the reporting of true, complete and accurate information to such authorities; healthcare fraud and abuse laws and regulations in the United States and abroad; or laws that require the reporting of financial information or data accurately. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws also involve the improper use of information obtained in the course of clinical trials or creating fraudulent data in our pre-clinical studies or clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. In addition, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

We may acquire businesses or drugs, or form strategic alliances, in the future, and we may not realize the benefits of such acquisitions.

We may acquire additional businesses or drugs, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new drugs resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction.

Risks Related to Our Common Stock

We have incurred and will continue to incur increased costs as a result of operating as a public company, and our management is required to devote substantial time to new compliance initiatives.

As a public company, we have incurred and expect to continue to incur, particularly after we are no longer an "emerging growth company," significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act of 2002 and rules subsequently implemented by the Securities and Exchange Commission, or SEC, and NASDAQ have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we will be required to furnish a report by our management on our internal control over financial reporting, including an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that neither we nor our independent registered public accounting firm will be able to conclude within the prescribed timeframe that our internal control over financial reporting is effective as required by Section 404. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

The price of our common stock has been and may in the future be volatile and fluctuate substantially.

Our stock price has been and in the future may be subject to substantial volatility. In addition, the stock market in general, and NASDAQ listed and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. For example, our stock traded within a range of a high price of $37.17 and a low price of $13.04 per share for the period beginning on April 30, 2015, our first day of trading on The NASDAQ Global Select Market, through November 9, 2016. As a result of this volatility, our stockholders could incur substantial losses. In addition, the market price for our common stock may be influenced by many factors, including:

- the success of competitive drugs or technologies;
- results of clinical trials of our drug candidates or those of our competitors;
- regulatory or legal developments in the United States and other countries;

- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our drug candidates or clinical development programs;
- the results of our efforts to discover, develop, acquire or in-license additional drug candidates or drugs;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this “Risk Factors” section.

These and other market and industry factors may cause the market price and demand for our common stock to fluctuate substantially, regardless of our actual operating performance, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management.

An active trading market for our common stock may not be sustained, and investors may not be able to resell their shares at or above the price they paid.

Although we have listed our common stock on The NASDAQ Global Select Market, an active trading market for our shares may not be sustained. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the price at which they acquired their shares or at the time that they would like to sell. An inactive trading market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

If equity research analysts do not publish research or reports about our business or if they publish negative evaluations of or downgrade our common stock, the price of our common stock could decline.

The trading market for our common stock relies in part on the research and reports that equity research analysts publish about us or our business. We do not control these analysts. We may never obtain research coverage by industry or financial analysts. If no or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our common stock, the price of our common stock could decline. If one or more of these analysts cease to cover our common stock, we could lose visibility in the market for our common stock, which in turn could cause our common stock price to decline.

Our executive officers, directors, principal stockholders and their affiliates maintain the ability to exercise significant influence over our company and all matters submitted to stockholders for approval.

The holdings of our executive officers, directors and stockholders who own more than 5% of our outstanding common stock, together with their affiliates and related persons, represent beneficial ownership, in the aggregate, of approximately 50% of our common stock, based on the number of shares of our common stock outstanding as of September 30, 2016. As a result, these stockholders, if they choose to act together, will be able to influence our management and affairs and the outcome of matters submitted to our stockholders for approval, including the election of

directors and any sale, merger, consolidation, or sale of all or substantially all of our assets. This concentration of voting power could delay or prevent an acquisition of our company on terms that other stockholders may desire.

In addition, this concentration of ownership might adversely affect the market price of our common stock by:

- delaying, deferring or preventing a change of control of us;
- impeding a merger, consolidation, takeover or other business combination involving us; or
- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of us.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated by-laws may delay or prevent an acquisition of us or a change in our management. These provisions include a classified board of directors, a prohibition on actions by written consent of our stockholders and the ability of our board of directors to issue preferred stock without stockholder approval. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. Although we believe these provisions collectively provide for an opportunity to obtain greater value for stockholders by requiring potential acquirors to negotiate with our board of directors, they would apply even if an offer rejected by our board were considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management.

Future sales of our common stock, including by us or our directors and executive officers or shares issued upon the exercise of currently outstanding options, could cause our stock price to decline.

A substantial portion of our outstanding common stock can be traded without restriction at any time. In addition, a portion of our outstanding common stock is currently restricted as a result of federal securities laws, but can be sold at any time subject to applicable volume limitations. As such, sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, by us or others, could reduce the market price of our common stock or impair our ability to raise adequate capital through the sale of additional equity securities. In addition, we have a significant number of shares that are subject to outstanding options. The exercise of these options and the subsequent sale of the underlying common stock could cause a further decline in our stock price. These sales also might make it difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. In addition, pursuant to our registration statement on Form S-3 (File No. 333-211266), which was declared effective by the SEC on July 25, 2016, we may sell up to $250,000,000 in aggregate dollar amount of securities, including common stock, from time to time in one or more offerings. However, we cannot predict the size of future issuances or the effect, if any, that any future issuances may have on the market price for our common stock.

We are an “emerging growth company,” and the reduced disclosure requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. We will remain an emerging growth company until the earlier of (i) December 31, 2020; (ii) the last day of the fiscal year in which we have total annual gross revenues of $1 billion or more; (iii) the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th. For so long as we remain an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- providing only two years of audited financial statements in addition to any required unaudited interim financial statements and a correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, we will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

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

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, under the loan and security agreement with Silicon Valley Bank, we are currently restricted from paying cash dividends, and we expect these restrictions to continue in the future. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for our stockholders for the foreseeable future.

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

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change" (generally defined as a greater than 50% change (by value) in the ownership of its equity over a three year period), the corporation's ability to use its pre-change net operating loss carryforwards and certain other pre-change tax attributes to offset its post-change income may be limited. We may have experienced such ownership changes in the past, and we may experience ownership changes in the future as a result of shifts in our stock ownership, some of which are outside our control. As of December 31, 2015, we had federal net operating loss carryforwards of approximately $123.9 million, and our ability to utilize those net operating loss carryforwards could be limited by an "ownership change" as described above, which could result in increased tax liability to us.

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

Use of Proceeds from Initial Public Offering of Common Stock

On May 5, 2015, we completed an IPO of our common stock, which resulted in the sale of 9,367,708 shares, including 1,221,874 shares sold by us pursuant to the exercise in full by the underwriters of their option to purchase additional shares in connection with the offering, at a price to the public of $18.00 per share. The offer and sale of all of the shares in our IPO was registered under the Securities Act of 1933, as amended, or Securities Act, pursuant to a

registration statement on Form S-1 (File No. 333-202938), which was declared effective by the SEC on April 29, 2015. Following the sale of the shares in connection with the closing of our IPO, the offering terminated. The offering did not terminate until the sale of all of the shares offered. Goldman, Sachs & Co. and Cowen and Company acted as joint book-running managers for the offering. JMP Securities acted as a co-manager for the offering. Wedbush PacGrow also acted as a co-manager for the offering.

We received approximately $154.8 million in net proceeds after deducting underwriting discounts and commissions and offering costs paid by us. As of September 30, 2016, we estimate that we have used approximately $98.3 million of the net proceeds from the offering as follows: approximately $21.9 million of external costs to fund our Phase 1 clinical trials for BLU-285 and BLU-554; approximately $26.9 million of external costs for new and ongoing research activities; approximately $18.7 million of internal research and development costs; and approximately $30.8 million for working capital and other general corporate purposes. None of the offering expenses consisted of direct or indirect payments made by us to directors, officers or persons owning 10% or more of our common stock or to their associates, or to our affiliates, and we have not used any of the net proceeds from the offering to make payments, directly or indirectly, to any such persons. There has been no material change in the planned use of the net proceeds from our IPO as described in our final prospectus filed with the SEC on April 30, 2015 pursuant to Rule 424(b)(4) under the Securities Act. We have invested the unused proceeds from the offering in cash equivalents and investments in accordance with our investment policy.

Item 6. Exhibits

The exhibits filed as part of this Quarterly Report on Form 10-Q are set forth on the Exhibit Index, which is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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.

BLUEPRINT MEDICINES CORPORATION

Date: November 10, 2016

By: /s/ Jeffrey W. Albers
Jeffrey W. Albers
President, Chief Executive Officer and Director (Principal Executive Officer)

Date: November 10, 2016

By: /s/ Michael Landsittel
Michael Landsittel
Vice President of Finance
(Principal Financial and Accounting Officer)

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
10.1*	Third Amendment to Collaboration and License Agreement, effective August 4, 2016, by and among F. Hoffmann-La Roche Ltd, Hoffmann-La Roche Inc. and the Registrant
10.2†*	Master Collaboration Agreement, dated August 22, 2016, between the Registrant and QIAGEN Manchester Limited, including Project Schedule #1, dated August 22, 2016
10.3#*	Employment Agreement, dated September 6, 2016, by and between the Registrant and Tracey L. McCain
31.1*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1+	Certifications of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

† Confidential treatment requested as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

* Filed herewith.

# Indicates management contract or compensatory plan or arrangement.

+ The certifications furnished in Exhibit 32.1 hereto are deemed to be furnished with this Quarterly Report on Form 10-Q and will not be deemed to be “filed” for purposes of Section 18 of the Exchange Act. Such certifications will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the Registrant specifically incorporates it by reference.

THIRD AMENDMENT TO COLLABORATION AND LICENSE AGREEMENT

This Third Amendment (this "**Amendment**"), effective August 4, 2016 ("**Effective Date**"), is by and between F. Hoffmann-La Roche Ltd, with an office and place of business at Grenzacherstrasse 124, 4070 Basel, Switzerland and Hoffmann-La Roche Inc., with an office and place of business at 150 Clove Road, Suite 8, Little Falls, New Jersey 07424, U.S.A. (together referred to as "**Roche**") and Blueprint Medicines Corporation, located at 38 Sidney Street, Suite 200, Cambridge, Massachusetts 02139 ("**Blueprint**").

WHEREAS, Blueprint and Roche entered into a Collaboration and License Agreement dated March 14, 2016, as amended by amendment, effective April 15, 2016, and second amendment, effective April 27, 2016 ("**Agreement**");

NOW THEREFORE, Roche and Blueprint hereby agree as follows:

The 5th paragraph of Section 4.1.5 of the Agreement shall be deleted in its entirety and replaced by the following:

> Two chemistry experts at Roche ("**Insulated Chemistry Experts**") and two metabolism experts ("**Insulated Pharmaceutical Sciences Experts**") shall be designated in writing by Roche to review structures of Other Compounds and Collaboration Compounds at the start of the collaboration and throughout the Lead Nomination phase. The Insulated Chemistry Experts and the Insulated Pharmaceutical Sciences Experts, in each case, shall independently handle the structural information, and no structures provided by BPM to the Insulated Chemistry Experts or the Insulated Pharmaceutical Sciences Experts can be shared with any other individuals within Roche (including by an Insulated Chemistry Expert to or with an Insulated Pharmaceutical Sciences Expert or vice versa, other than the structures intended for testing by the Insulated Pharmaceutical Sciences Experts) other than members of senior management specified on Appendix 4.1.5 acting in their decision making capacity. For clarity, these structures cannot be used for any other purpose, including any research purpose. Appropriate safeguards will be established by Roche that are intended to prevent any inadvertent disclosure or improper use of these structures and any structural information related to such structures. From Lead Nomination onwards and throughout Lead Optimization, the structures of Other Compounds and Collaboration Compounds in the Lead Optimization phase shall be shared with the Roche project team members (including Collaboration Compounds meeting Lead Series Identified Criteria, CLS Criteria and CCS Criteria).

All other terms defined in the Agreement are to be interpreted as defined therein, and all other terms of the Agreement are to remain in full force and effect.

This Amendment may be executed in counterparts, each of which shall be deemed an original, but both of which together shall constitute one and the same instrument.

[Signature page follows.]

IN WITNESS WHEREOF, the parties have caused this Amendment to be executed by their duly authorized representatives.

Blueprint Medicines Corporation

/s/ Jeffrey Albers

Name: Jeffrey Albers

Title: Chief Executive Officer

F. Hoffmann-La Roche Ltd

/s/ Stefan Arnold

Name: Stefan Arnold

Title: Head Legal Pharma

/s/ Andreas Hohn

Name: Dr. Andreas Hohn

Title: Vice Director

Hoffmann-La Roche Inc.

/s/ David P. McDede

Name: David P. McDede

Title: Vice President – Treasurer

***** Text Omitted and Filed Separately with the Securities and Exchange Commission**
Confidential Treatment Requested Under 17 C.F.R. Sections 200.80(b)(4) and 230.406

MASTER COLLABORATION AGREEMENT

for Compani *Confidential and Proprietary Information of Blueprint and QIAGEN*
on Diagnostics

Between Blueprint Medicines Corporation
38 Sidney Street, Suite 200
Cambridge, MA 02139
hereinafter "**Blueprint**"

and Qiagen Manchester Limited
Skelton House, Lloyd Street North
Manchester, M15 6SH,
England
hereinafter **"QIAGEN"**

dated: August 22, 2016 (the **"Effective Date"**).

WHEREAS,

Blueprint is a global pharmaceutical company engaged in the research, development, manufacture and commercialization of pharmaceutical products to treat disease;

QIAGEN is a global biotechnology company engaged in the research, development, manufacture and commercialization of diagnostic products, including companion diagnostics, to aid in the selection and use of pharmaceutical products;

QIAGEN and Blueprint wish to establish a legal framework for their potential collaborations relating to QIAGEN's development and commercialization of a companion diagnostic product for a Blueprint Product.

NOW, therefore, the Parties agree as follows:

1. Definitions.

1.1 The following terms used in the Agreement shall have the meanings set forth below:

"**Activities**" shall mean the activities to be performed by either Party in connection with a particular Project for Blueprint.

"**Affiliate**" shall mean any entity which, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with a Party, as the case may be. As used in this definition, "control" shall mean the possession of the power

to direct or cause the direction of the management and policies of an entity, whether through the ownership of the outstanding voting securities or by contract or otherwise.

"Agreement" shall mean this Master Collaboration Agreement and any Project Schedules executed hereunder.

"**Analytical Performance Data**" is defined in Section 8.1(d).

"**Background Intellectual Property**" shall mean, in connection with a specific Project, all Intellectual Property that is in existence and Controlled by a Party at the effective date of the respective Project Schedule or that comes into the Control of a Party during the term of this Agreement outside of performing Activities.

"**Blueprint Biomarker Data**" is defined in Section 8.1(b).

"**Blueprint Product Data**" is defined in Section 8.1(b).

"**Blueprint Compound**" shall mean a single biological or chemical substance identified in a Project Schedule that Blueprint is developing or Commercializing for the medical prevention, treatment, or cure of diseases of human beings.

"**Blueprint Domain Names**" shall mean any Domain Name identical or similar with the Blueprint Trademarks under any ccTLD (country code Top Level Domain) and gTLD (generic Top Level Domain) address area.

"**Blueprint Product**" shall mean any product containing a Blueprint Compound.

"**Blueprint Trademarks**" shall mean the trademarks that Blueprint uses for the marketing of the Blueprint Products where a QIAGEN IVD will be used in connection with such Blueprint Products.

"**Business Day**" means any day other than a Saturday, Sunday, bank holiday or public holiday in Cambridge, Massachusetts USA or the United Kingdom.

"**Clinical Trial**" shall mean a clinical investigation of a Blueprint Product undertaken or supported by Blueprint as part of the development of such pharmaceutical product to obtain information relating to patient outcome and/or selection for therapy with such pharmaceutical product, which includes the use of the QIAGEN IVD or any prototype of it developed in the respective Project.

"**Commercialization**" and "**Commercialize**" means all activities undertaken relating new product planning, marketing, distribution and sale of a Blueprint Product or QIAGEN IVD, and the process of Commercialization, respectively. For clarification, this excludes development and regulatory activities.

"**Commercially Reasonable Efforts**" means, with respect to a Party, that level of efforts and resources required to carry out a particular task or obligation in an active and sustained manner, and consistent with such efforts undertaken by a similarly situated company in

pursuing development or commercialization of a product with similar market potential and at a similar stage in development or commercialization and taking into account all relevant factors.

"Commercialization Project Schedule" shall mean an individual agreement executed by the Parties for the conduct of additional Commercialization activities with respect to the IVD, as further described in Article 13 of this Agreement.

"**Confidential Information**" shall mean any confidential or proprietary information of a Party, relating to any assay, diagnostic, biomarker, genetic sequence, compound, research project, work in process, future development, scientific, engineering, launch, manufacturing, marketing, business plan, financial or personnel matter relating to such Party, its present or future products, sales, suppliers, customers, employees, investors or business, including the results arising from this Agreement, whether in oral, written, graphic or electronic form. Confidential Information shall also include the terms, but not the existence, of this Agreement.

"**Control**" **or** "**Controlled**" **or** "**Controlling**" shall mean, with respect to any item of Intellectual Property, the possession of the right - whether directly or indirectly, and whether by ownership, license (other than pursuant to this Agreement) or otherwise - to assign, or to grant the other Party access or a license or sublicense, as provided for herein, without violating the terms of any agreement or other arrangement with a third party.

"**Data**" is defined in Section 8.1.

"**Deliverables**" shall mean the Data, documents, filings and/or other materials to be provided to Blueprint by QIAGEN in connection with a particular Project as specified in the applicable Project Schedule.

"Development Project" shall mean a project performed under this Agreement in one or more of the following areas, as agreed between the Parties and set out in a Project Schedule: (a) biomarker identification and validation, (b) prototype assay development, (c) companion diagnostic proof of concept, (d) *in vitro* diagnostic development, (e) enrollment assay development, (f) Clinical Trial support and regulatory consultation, and/or (g) Regulatory Submission and QIAGEN IVD registration; which project ultimately may result in the creation and Commercialization of a QIAGEN IVD in Markets for a Blueprint Compound under this Agreement.

"**Diagnostics Field**" shall mean *in vitro* testing for research use, or exploratory use, or as a clinical diagnostic for use in the diagnosis and/or on-going evaluation of a disease or medical condition, including the prediction and/or monitoring of a response to a therapeutic agent, and also use as an *in vitro* diagnostic for commercial purposes.

"**EMA**" shall mean the European Medicines Agency.

"**EU**" shall mean the European Union.

"**FDA**" shall mean the U.S. Food and Drug Administration.

"**Foreground Intellectual Property**" shall mean any and all Intellectual Property arising directly from work performed under and according to a Project during the Term whether conceived, discovered, reduced to practice or writing, generated or developed by the employees, agents, contractors or consultants of Blueprint and/or its Affiliates and/or by the employees, agents, contractors or consultants of QIAGEN and/or its Affiliates, solely or jointly. For clarification, Foreground Intellectual Property shall exclude Data.

"**Governmental Authority**" shall mean any court, agency authority, department, regulatory body or other instrumentality of any government or country or of any national, federal, state, provincial, regional, county, city or other political subdivision of any such government or any supranational organization of which any such country is a member.

"**Inability to Supply**" means QIAGEN's inability to supply the QIAGEN IVD to Blueprint in accordance with its [***] quantities of the QIAGEN IVD within [***] days after the lead time for the QIAGEN IVD agreed to by the Parties.

"**Intellectual Property**" shall mean all intellectual property rights, including patent rights (pending or issued), know-how, methods, processes, utility models, registered designs, design rights, copyrights, copyright registrations, trade secret and other Confidential Information, and similar intellectual property rights, and all applications for any of the foregoing.

"**IVD**" shall mean *in vitro* diagnostic medical device as defined in the European directive 98/79/EC; for the avoidance of doubt the term IVD includes companion diagnostics for a pharmaceutical product as defined in FDA's "Draft Guidance for Industry and Food and Drug Administration Staff – In Vitro Companion Diagnostic Devices".

"**Market**" shall mean all [***] and any other country of the world in which the Parties mutually agree to jointly Commercialize (or have Commercialized) the Blueprint Product and the QIAGEN IVD, as specified in a Project Schedule.

"**Materials**" shall mean the biological samples, compounds, reagents, supplies, products and other goods that Blueprint delivers to QIAGEN, or QIAGEN procures from a third party, for purposes of performing the this Agreement, and all modifications and derivatives of such Materials.

"**Party**" shall mean Blueprint or QIAGEN as the context requires and "**Parties**" shall mean both Blueprint and QIAGEN.

"**PMA**" shall mean Pre-Market Approval as defined by FDA.

"**Project**" shall mean a Development Project performed under this Agreement and/or subsequent Commercialization of the respective QIAGEN IVD.

"**Project Schedule**" shall mean an individual agreement executed by the Parties for the performance of a Project, as further described in Article 3 of this Agreement.

"**Publication**" is defined in Section 7.7.

"**QIAGEN Biomarker Data**" is defined in Section 8.1(c).

"**QIAGEN Domain Names**" shall mean any Domain Name identical or similar with the QIAGEN Trademarks under any ccTLD (country code Top Level Domain) and gTLD (generic Top Level Domain) address area.

"**QIAGEN IVD**" shall mean an IVD developed by QIAGEN in the course of a Project including its respective development stages.

"**QIAGEN IVD Platform**" shall mean a diagnostic instrumentation or device, firmware base software and user interface software, which may include, for example, the RGQ or QIAsymphony instruments.

"**QIAGEN Trademarks**" shall mean the trademarks which QIAGEN uses for the Commercialization of the QIAGEN IVD to be used in connection with a Blueprint Product.

"**Regulatory Approval**" shall mean with respect to a regulatory jurisdiction, any and all approvals, product and/or establishment licenses, registrations or authorizations of any Governmental Authority, necessary for the commercial manufacture, use, storage, import, export, transport, or Commercialization of a product in such regulatory jurisdiction, including, where applicable, (a) pricing and reimbursement approval in such regulatory jurisdiction, (b) pre- and post-approval marketing authorisations (including any prerequisite manufacturing approval or authorisation related thereto), (c) labelling approval and (d) technical, medical and scientific licences. With regard to an IVD, Regulatory Approval would occur upon FDA approval of a Premarket Approval (PMA) for the IVD and similar approvals of Governmental Authorities in other jurisdictions.

"**Regulatory Submission**" shall mean with respect to a regulatory jurisdiction, any and all submissions, which are necessary to obtain and maintain a Regulatory Approval.

"**Tier One Countries**" shall mean the United States, France, Germany, Italy, Spain, the United Kingdom and Japan.

"Trademark" shall mean the Blueprint Trademarks and the QIAGEN Trademarks.

1.2 Other Definitional and Interpretative Provisions. The words "hereof", "herein" and "hereunder" and words of like import used in this Agreement shall refer to this Agreement as a whole and not to any particular provision of this Agreement. The captions herein are included for convenience of reference only and shall be ignored in the construction or interpretation hereof. Any capitalized term used in any Project Schedule but not otherwise defined therein shall have the meaning as defined in this Agreement. Any singular term in this Agreement shall be deemed to include the plural, and any plural term the singular.

Whenever the words "include", "includes" or "including" are used in this Agreement, they shall be deemed to be followed by the words "without limitation", whether or not they are in fact followed by those words or words of like import. Except where the context otherwise requires, the word "or" is used in the inclusive sense connoted by the term "and/or." This Agreement will be fairly interpreted in accordance with its terms and without any strict construction in favor of or against either Party.

2. Term. This Agreement shall commence on the Effective Date and continue for an initial term of the later of: (a) five (5) years; or (b) the term of any Project Schedule executed hereunder ("**Term**").

3. Projects.

3.1. Project Schedules. The Project Schedule for the work to be conducted under the initial Project is attached hereto as Appendix 1-A. This shall be considered Project Schedule #1. For each additional Project to be conducted under this Agreement, the Parties shall negotiate and, subject to the JSC's approval as set forth under Section 14.2(b), execute a Project Schedule using the format of the Project Schedule in Appendix 1-A and assign consecutive numbering to each (*e.g.*, Project Schedule #2, etc.). Neither Party shall be obliged to enter into any Project Schedule by virtue of this Agreement. Once executed by both Parties, the Project Schedule and any subsequent amendment(s) thereto shall be governed by the terms of this Agreement. QIAGEN will use Commercially Reasonable Efforts to perform the activities under each Project Schedule, and such performance, including the preparation and delivery of materials demonstrating achievement of Milestones, shall be conducted in accordance with applicable industry standards.

3.2. Scope Changes. In the event the Parties agree that the Activities or Deliverables of a Project should be modified, or that additional Activities or Deliverables should be conducted, the Parties shall prepare a written amendment of the Project Schedule for execution by the Parties. A Party shall not vary from the Activities and Deliverables set out in the original Project Schedule until the Parties have agreed to do so in writing.

3.3. Conflicting Provisions. In the event there is a specific conflict between the terms or conditions of this Agreement and the terms or conditions of any Project Schedule, the terms and conditions of this Agreement shall govern, unless the Project Schedule specifically and expressly supersedes this Agreement on a specific matter and then only with respect to the particular Project Schedule and the matter so specified.

4. Materials and Records.

4.1. Materials Delivery. Materials required for the conduct of the Project shall be outlined in the Project Schedule or otherwise agreed in writing by the Parties. Materials must be de-identified of personal health information prior to shipment to QIAGEN. Blueprint acknowledges that the provision of Materials by Blueprint and third parties is largely

beyond the control of QIAGEN, and therefore QIAGEN shall not be held liable for delays to the Project caused by late shipments of Materials, where the delay was not caused by QIAGEN. If QIAGEN believes that any Materials provided by Blueprint do not conform to their specifications, if applicable, or are otherwise defective, then (a) QIAGEN shall provide Blueprint a written notice explaining in reasonable detail why such Materials do not conform to such specifications or are otherwise defective and (b) in the event the Parties agree on such non-conformance or defect, Blueprint shall: (i) provide new or replacement Materials or (ii) if it is not possible provide new or replacement materials, propose and discuss with QIAGEN in good faith an alternative, and amend the Project Schedule in writing to reflect such alternative. In case the Parties disagree on the question of non-conformance or defect of such Material, the Parties will discuss this matter and agree in good faith on a solution. To the extent Blueprint requests that QIAGEN procure Materials directly from the relevant vendor, such procurement may be subject to a handling charge to be agreed by the Parties in advance. To the extent a Milestone is dependent on the timely receipt of such Materials, the Parties shall negotiate an equitable interim payment for the portion of the Milestone that was completed, with the remainder to be paid upon actual completion of the Milestone.

4.2. Use Restrictions. QIAGEN shall handle the Materials in accordance with any applicable documentation, reasonable handling procedures for similar materials, applicable common scientific standards of care, and Blueprint's written instructions. Upon receipt of Materials from Blueprint or a third party provider, QIAGEN shall be responsible for the chain of custody of the Materials and shall use the Materials only in connection with the Activities described in the applicable Project Schedule and for no other purpose. QIAGEN shall use the Materials in accordance with applicable laws. None of the Materials shall be transferred or sold to third parties except to subcontractors approved by Blueprint in accordance with the terms of this Agreement. QIAGEN shall not use the Materials for testing in or treatment of human subjects except to the extent described in the applicable Project Schedule. QIAGEN understands and agrees that the Materials are experimental in nature and that Blueprint shall not be liable for, and expressly disclaims, any loss, claim, damage or liability which may arise from the use, storage or handling of the Materials by QIAGEN.

4.3. Inspections, Audits, or Investigations of QIAGEN by Regulatory Authorities. Upon reasonable and lawful request, QIAGEN will allow appropriate worldwide regulatory authorities to inspect its facilities or review records relating to Activities.

(a) Routine Matters. QIAGEN will provide Blueprint with prompt notice after QIAGEN receives notice from a Regulatory Authority intending to perform a routine inspection, audit or investigation, or take any other type of routine regulatory action in relation to the Activities, of QIAGEN's facilities and records used to perform a Project for Blueprint under this Agreement.

(b) Non-Routine Matters. If any Regulatory Authority gives QIAGEN notice of its intent, with respect to any QIAGEN facility that is performing a Project for Blueprint under this Agreement, to conduct a non-routine inspection, audit or investigation, or take any other type of regulatory action in relation to the Activities, then QIAGEN will give Blueprint notice within (i) [***] Business Days after QIAGEN's receipt of such notice thereof, if such inspection, audit or investigation is specific to a Project and (ii) [***] Business Days after QIAGEN's receipt of such notice thereof, if such inspection, audit or investigation is not specific to a Project, and, in either case (i) or (ii), if notice is not provided to QIAGEN in advance of any such inspection, then QIAGEN will notify Blueprint promptly.

(c) Blueprint Right to [***]; Cooperation. Blueprint, or with QIAGEN's consent, its consultant, shall have the right to [***] during the course of any inspections, audits and investigations specifically related the Blueprint Product. Blueprint's or its consultant's [***] during the course of any such inspections, audits and investigations (i) [***], and (ii) [***]. QIAGEN will cooperate with the applicable Regulatory Authority (and keep Blueprint representatives timely informed) in the conduct of such inspections, audits and investigations and will maintain records of such Activities in a way that facilitates the objectives of such activities.

(d) Inspection Findings and Responses. QIAGEN will provide regular updates to Blueprint during the course of any audit performed pursuant to Section 4.3(a) or Section 4.3(b). Within [***] Business Days of receipt, QIAGEN will provide to Blueprint copies of all relevant information and findings pertaining to the matters set forth in Section 4.3(a) and Section 4.3(b), in each case, related to the Activities or that would materially impact either QIAGEN's ability to obtain Regulatory Approval for, or ensure the clinical or commercial supply of, the QIAGEN IVD being developed for Blueprint under a Project Schedule. Whenever feasible and solely to the extent that it would not compromise the timeliness or quality of the response, QIAGEN will also provide Blueprint with an opportunity to prospectively review and comment on any QIAGEN responses to Regulatory Authorities that relate to Activities. Regardless of whether Blueprint has an opportunity to prospectively review and comment on any QIAGEN responses, QIAGEN will have the final say and determine the appropriate response and provide Blueprint a copy of the response submitted to Regulatory Authorities.

4.4. Audits of QIAGEN by Blueprint. During the Term, Blueprint shall have the right to audit or have audited QIAGEN's facility and records and any other documentation and facilities directly related to development, manufacturing and/or regulatory activities for a Project, no more than [***]. QIAGEN agrees to maintain accurate and detailed records and information pertaining to any particular Project and agrees to grant access to Blueprint (or its nominee, which nominee shall be subject to approval by QIAGEN in its reasonable discretion)) to perform such audit. Blueprint will provide no less than [***] prior written notice to QIAGEN in advance of any audit (other than an audit "for cause"), and the

applicable auditor shall be subject to QIAGEN's reasonable confidentiality policies. In addition, Blueprint shall have the right to audit QIAGEN's facility and records related to a Project at any time "for cause." An "audit for cause" shall be defined as an audit of QIAGEN's facility or records requested and conducted by or on behalf of Blueprint due to the existence of an operational issue in the manufacture of any component of the QIAGEN IVD that Blueprint reasonably believes in good faith may result in a cGMP or other regulatory deficiency or failure of QIAGEN to meet its obligations under this Agreement (such as repeated failure of the QIAGEN IVD to meet its specifications, evidence of regulatory noncompliance and fraudulent data from any clinical trial conducted by or on behalf of QIAGEN). Such audit(s) will require reasonable prior written notice by Blueprint, and shall be subject to QIAGEN's reasonable confidentiality and site security policies.

4.5. Financial Records. QIAGEN agrees to maintain for a period of four (4) years adequate records of, and copies of all receipts for third party expenses incurred in connection with the performance of the Activities and allow access to Blueprint and its authorized representatives to inspect such records and receipts upon reasonable notice during ordinary business hours and subject to QIAGEN's generally applicable security and safety procedures.

5. Interactions with Affiliates and Third Parties.

5.1. Subcontractors.

(a) Either Party may involve any of its Affiliates in the performance of a Project without notice to or consent from the other Party. QIAGEN shall have the right to utilize third party contractors and consultants in the performance of a Project, subject to Blueprint's prior written approval, provided that QIAGEN shall remain liable for the performance of the obligations. Each Party is and remains solely and exclusively responsible for the conduct of activities by any Affiliate (or, in the case of QIAGEN, authorized third party contractors) under this Agreement, and any breach by an Affiliate (or, in the case of QIAGEN, authorized third party contractor) that would constitute a breach of this Agreement by the applicable Party will be a breach of this Agreement by such Party.

(b) To the extent that a Party utilizes its' Affiliates (or, in the case of QIAGEN, third party contractors with Blueprint's prior written approval) to perform tasks within the scope of a Project, such Party shall ensure all such Affiliates or third party contractors have entered into an appropriate written agreement with the Party utilizing such Affiliate or authorized third party contractor obligating such person to: (i) treat the other Party's Confidential Information in accordance with the provisions of Article 7, (ii) assign rights to any Foreground Intellectual Property and/or Data so that such rights can be conveyed in accordance with the terms and conditions of Article 8, and (iii) with respect to QIAGEN, that its Affiliates or third party contractors grant audits and inspection rights similar to the rights set forth in Sections 4.3 and 4.4; whereas the foregoing shall not limit QIAGEN's

audit and inspection responsibilities. Each Party shall be liable and solely responsible for the acts, performance and compensation of its respective third party contractors.

5.2. Contract Laboratories. The Parties may use third party laboratories (hereinafter "Contract Laboratories") for the performance of certain services, such as sample testing, in a Development Project. The terms for use of Contract Laboratories shall be set forth in a Project Schedule, but the following general principles shall apply:

(a) Contracts. Blueprint shall be responsible for selecting and contracting with the Contract Laboratories engaged to assess the clinical utility of a QIAGEN IVD, subject to QIAGEN's prior consent which may only be withheld in case QIAGEN has reasonable quality concerns with respect to the performance of such sample testing by such Contract Laboratory.

(b) Certifications. Blueprint and QIAGEN shall ensure that the Contract Laboratories are properly certified to perform the clinical utility work according to the applicable Project Schedule for the Project and this Agreement.

(c) Products and Equipment. To the extent that the QIAGEN IVD Platform is not already installed at a given Contract Laboratory, QIAGEN shall be solely responsible for the manufacture and supply of the QIAGEN IVD Platform to the Contract Laboratories for clinical utility testing, and Blueprint will bear the expenses associated with such manufacture and supply. In addition, QIAGEN shall be solely responsible, at Blueprint's expense, for sufficient educating and training of the Contract Laboratories personnel as necessary for conducting the clinical utility testing. Blueprint shall be responsible for ensuring that each such Contract Laboratory has or is provided the necessary equipment (including any upgrades) needed to perform any assay developed hereunder, all of which shall be at Blueprint's or the Contract Laboratory's expense, as agreed between Blueprint and the Contract Laboratory.

6.Financial Terms

6.1. Milestones.

(a) Payments. QIAGEN shall be compensated for the performance of a Project on the basis of achievement of the Milestones set forth in the Project Schedule.

(b) Acceptance Process. Upon completion of a Milestone, QIAGEN shall issue a notice to Blueprint, and Blueprint shall have up to [***] Business Days to review the notice and any associated Deliverables and provide a written acceptance of the Milestone to QIAGEN. Failure to respond within this timeframe shall constitute acceptance. In the event Blueprint disputes that a Milestone has been properly completed, Blueprint shall provide a written notice to QIAGEN within the initial [***] Business Day review period, describing in reasonable detail the basis for its dispute. The Parties shall work in good faith to resolve the dispute and QIAGEN shall use Commercially Reasonable Efforts to correct any

deficiencies in a timely fashion. If the dispute is resolved by mutual agreement of the Parties that the particular Milestone has been completed, then Blueprint shall issue a notice of written acceptance of the applicable Milestone to QIAGEN within [***] Business Days of the resolution of such dispute. If the dispute is resolved by mutual agreement of the Parties that the particular Milestone has not been completed, then QIAGEN shall undertake any additional activities necessary to complete such Milestone. If the Parties are unable to resolve such dispute, then it shall be resolved in accordance with Section 18.3.

(c) Invoicing. Upon receipt of Blueprint's acceptance or upon expiration of the [***] Business Day review period as described above, QIAGEN shall issue an invoice to Blueprint for the relevant Milestone Payment. Invoices will include the name of the requisitioner (who will initially be [***]), and will be addressed as follows:

QIAGEN will send invoices to Blueprint at the following address via email:

Blueprint Medicines Corporation
38 Sidney Street, Suite 200
Cambridge, MA 02139
Attention: [***]

6.2. Blueprint Pass-through Costs and Expenses.

(a) Reimbursement. Blueprint shall reimburse QIAGEN for the direct costs and expenses incurred by QIAGEN in the performance of a Project without markup or surcharge ("Pass-through Costs and Expenses") and agreed by the Parties in advance according to the Project Schedule.

(b) Currency Conversion.

Any Pass-through Costs and Expenses that were incurred in a currency other than USD shall be converted into USD using the average of the fixing exchange rates published by Bloomberg under the function "BFIX" for the respective currency at noon New York time for the applicable calendar quarter. If, on any Business Day, no USD foreign exchange fixing rate is determined by Bloomberg for the relevant currency, the last Bloomberg price of such day (data field "PX last") shall be used instead.

6.3. Payment Terms. Any invoices issued by QIAGEN pursuant to this Agreement, including Section 6.1 or Section 6.2, shall be paid in accordance with this Section 6.3.

(a) Undisputed Amounts. Blueprint shall pay all undisputed amounts set forth in any invoice (including any Milestone accepted pursuant to Section 6.1(b)) in US Dollars ("USD") within [***] days of receipt of the applicable invoice from QIAGEN.

(b) Payment Disputes. In the event Blueprint disputes an invoice from QIAGEN in good faith (other than with respect to a Milestone previously accepted pursuant to Section 6.1(b)), Blueprint shall notify QIAGEN of its dispute within the [***] day payment terms and provide sufficient detail for QIAGEN to investigate the issue. Blueprint shall pay any

portion of the invoice not in dispute within the original [***] day payment terms. The Parties shall work together in good faith to resolve payment disputes in a timely fashion.

(c) Late Payment Interest. In the event Blueprint fails to pay an invoice according to the payment terms, and has not notified QIAGEN of a good faith dispute with such invoice, QIAGEN shall have the right to charge interest, commencing on the due date (inclusive) and ending on the actual payment date (exclusive). Interest shall be calculated based on the actual number of days in the interest period divided by 360. The interest rate per annum shall be equal to the [***] rate, fixed [***] prior to the due date and reset to the prevailing [***] rate in monthly intervals thereafter, plus a premium of [***].

(d) Suspended Performance. If Blueprint fails to make an undisputed payment under a Project Schedule within [***] days after the date when due, then QIAGEN shall be entitled to provide Blueprint with [***] working days' notice of its intention to suspend its performance under such Project Schedule until the due amount has been paid.

(e) Taxes.

(i) All agreed remunerations/fees are considered to be net of value added tax (hereinafter "VAT"). VAT will be due additionally as legally owed to the applicable jurisdiction, payable after receipt of a proper invoice, which meets all legal requirements according to the applicable VAT-law.

(ii) To the extent that the goods or services to be provided hereunder are subject to any sales, use, rental, personal property, or any other transaction or indirect taxes under law, payment of said taxes is Blueprint's responsibility, subject to any applicable exemption entitlement.

(iii) Any Party required to make a payment (hereinafter the "Paying Party") to the other Party (hereinafter the "Payee") under this Agreement shall be entitled to deduct and withhold from the amount payable the withholding tax for which the Paying Party is liable under any provisions of tax law. Any withheld tax shall be treated as having been paid by Paying Party to Payee for all purposes of this Agreement. Paying Party shall timely forward the tax receipts certifying the payments of withholding tax on behalf of Payee. In case Paying Party cannot deduct the withholding tax due to fulfillment completion of payment obligation by settlement or set-off, Payee will pay the withholding tax to Paying Party separately. If Paying Party failed to deduct withholding tax but is still required by tax law to pay withholding tax on account of Payee to the tax authorities, Payee shall assist Paying Party with regard to all procedures required in order to obtain reimbursement by tax authorities or, in case tax authorities will not reimburse withholding tax to Paying Party, Payee will immediately refund the tax amount.

7. Confidentiality.

7.1. Use of Confidential Information. In connection with this Agreement and individual Projects, the Parties anticipate that each Party will disclose Confidential Information to the other Party in order to facilitate the performance of their respective obligations thereunder (the "**Purpose**"). Therefore, each Party shall: (a) only use Confidential Information of the other Party for the Purpose, (b) maintain the disclosing Party's Confidential Information in confidence using the same degree of care that it uses for its own Confidential Information of like importance, but in no event using less than reasonable care, and (c) not disclose or transfer any Confidential Information of the disclosing Party (or any materials which contain such Confidential Information), to any third party without the disclosing Party's written consent; provided, however, that disclosure shall be permitted to the receiving Party's directors, officers, employees, advisors (including accountants, attorneys, consultants, and financial advisors), agents or subcontractors (and those of its Affiliates) who reasonably require such Confidential Information for the Purpose and who are bound by obligations of non-use and confidentiality with respect to such Confidential Information no less restrictive than the provisions of this Article 7. Notwithstanding the foregoing, Blueprint shall also be entitled to disclose the existence and terms of (x) this Agreement and (y) [***] on a need-to-know basis to any bona fide potential or actual: (i) [***] partners for a Blueprint Product; or (ii) sources of financing or acquirers of Blueprint or any investment banker, placement agent, accountant or other financial or legal advisor in connection with any such transaction, in each case ((i) or (ii)), to the extent necessary to [***] or to the extent [***]; provided that such third party is subject to a confidentiality agreement or other obligations of non-use and confidentiality no less restrictive than this Article 7 and that would reasonably be expected to prohibit any further disclosure of the [***] to any other third party (unless such data (A) is generally known to the public or becomes generally known without the recipient violating such obligations of non-use and confidentiality; (B) is in the recipient's possession; (C) becomes known to the recipient through disclosure by sources other than the disclosing Party without such sources violating any confidentiality obligations to the a Party; (D) is independently developed by the recipient without reference to or reliance upon such data; or (E) is otherwise permitted pursuant to the terms and conditions of this Agreement); and provided, further, that Blueprint shall not disclose the financial terms of this Agreement to any potential or actual partner pursuant to Section 7.1 or potential or actual acquirer pursuant to Section 7.2, including, in either case, any financial or legal advisor acting on such Party's behalf [***]. Any disclosures made pursuant to the foregoing Section 7.1(i) or Section 7.1(ii) shall not require QIAGEN's prior written consent, unless the party to whom Blueprint is making such disclosure is a direct competitor of QIAGEN in the field of [***]. Notwithstanding the foregoing, when a Party is assigned any Intellectual Property pursuant to Article 9, all information included in such Intellectual Property will be deemed to be the Confidential

Information of such assignee Party, even if such information was initially disclosed by the other Party.

7.2. Non-Confidential Information. The obligations set forth in Section 7.1 shall not apply to any information that the receiving Party can demonstrate by competent proof: (a) was possessed by the receiving Party or any of its Affiliates prior to disclosure or development under this Agreement, (b) was developed by the receiving Party or any of its Affiliates independently from disclosure or development under this Agreement, (c) is now or becomes later publicly available other than by breach of this Agreement by receiving Party or any of its Affiliates, or (d) is available to the receiving Party or any of its Affiliates from a third party that is not legally prohibited from disclosing such information.

7.3. Compelled Disclosure. In the event a receiving Party is compelled by legislative or judicial order to disclose the Confidential Information of the disclosing Party, the receiving Party shall take reasonable steps to give the disclosing Party sufficient prior notice in order to allow the disclosing Party an opportunity to contest such order at the request and expense of the disclosing Party. In the event the receiving Party is ultimately required to disclose such Confidential Information, the receiving Party shall disclose only such portion of the Confidential Information that is required to be disclosed under the advice of its counsel, and will seek, at the disclosing Party's request and expense, a protective order to protect the confidentiality of such Confidential Information.

7.4. SEC Filings. To the extent a Party believes in its reasonable judgment and pursuant to advice from legal counsel that it is required to disclose the terms of this Agreement or an individual Project Schedule in a filing with the Securities and Exchange Commission ("**SEC**"), the Party intending to make such disclosure shall: (i) as promptly as reasonably practicable, provide the other Party with prior notice of the intended disclosure to the SEC and a draft of the intended disclosure for the other Party's review and comment; (ii) incorporate the other Party's reasonable requests to modify the draft disclosure (including without limitation, redactions of that Party's Confidential Information); (iii) as promptly as reasonably practicable, provide the other Party with a copy of the relevant portions of any SEC comment letter or other written communication that expresses an objection by the SEC staff to any redaction or omission of information about, or specific terms or provisions of, the Agreement or Project Schedule from such filing, and (iv) before publicly disclosing such information or restoring the redacted terms or provisions in the disclosure, incorporate the other Party's timely and reasonable requests to modify the draft disclosure (including without limitation, revised redacted terms or provisions in the disclosure) unless the Party believes in its reasonable judgment and pursuant to advice from legal counsel that any SEC comment letter or other written communication pursuant to clause (iii) or applicable law or regulation requires such disclosure.

7.5. Initial Press Release. Upon execution of this Agreement and any Project Schedule, either Party shall have the right to issue an initial press release announcing the execution of the relevant agreement; provided that any Party intending to issue an initial press release shall (a) provide the other Party with a reasonable opportunity to review and comment on a draft of the intended press release and (b) incorporate the other Party's reasonable requests to modify such press release. Except as otherwise set forth in this Article 7, in the event that either Party wishes to disclose the terms of this Agreement or any Project Schedule, the Party wishing to make the disclosure shall: (a) provide the other Party a draft of such announcement at least fifteen (15) Business Days prior to its public release; and (b) incorporate any comments provided by the other Party relating to mention of its company or products in such announcement. Other than these initial press releases, neither Party may make (or have made on its behalf) any oral or written release of any statement, information, advertisement or publicity in connection with this Agreement or Project Schedule which uses the other Party's name, symbols, or trademarks without the other Party's prior written approval, which shall not be unreasonably withheld or delayed unless such release includes only those facts that were initially released in accordance with this Section 7.5.

7.6. Equitable Relief. Each Party agrees that damages may not be an adequate remedy for breach of this Article 7 and that, accordingly, either Party shall be entitled to seek injunctive or other equitable relief to prevent disclosure of its Confidential Information.

7.7. Publications. Each Party shall have the right to publish, present or use Foreground Intellectual Property and/or any portion thereof that it Controls in furtherance of its publication objectives (a "Publication"). Blueprint will be responsible for and will control the timing and scope of any Publication of Blueprint Background Intellectual Property and Blueprint Foreground Intellectual Property. QIAGEN will be responsible for and control the timing and scope of any Publication of the QIAGEN Background Intellectual Property and QIAGEN Foreground Intellectual Property. Any Publications of the Joint Foreground Intellectual Property must be agreed and approved by all Parties. Furthermore, Blueprint shall not have the right to publish, present or use the QIAGEN Background Intellectual Property, QIAGEN Foreground Intellectual Property or any portion thereof for any Publication without QIAGEN's prior written consent, and QIAGEN shall not have the right to publish, present or use the Blueprint Background Intellectual Property or Blueprint Foreground Intellectual Property or any portion thereof for any Publication without Blueprint's prior written consent. Such Publication shall be subject to the provisions of this Agreement relating to confidentiality and non-disclosure. At least [***] days prior to submission for publication, the publishing Party shall submit to the other Party for review any proposed Publication that contains any Intellectual Property Controlled by the other Party. The other Party shall review the proposed Publication and provide its comments to the publishing Party within [***] days of receipt. The Parties agree that the non-publishing Party may request the proposed submission date to be delayed, and the publishing Party

agrees to delay, by up to an additional [***] days in order to provide its comments or address concerns regarding the Publication. In addition, upon the other Party's notice to the publishing Party that the other Party reasonably believes that one or more patent applications should be filed which relate to Foreground Intellectual Property Controlled by the other Party or Joint Foreground Intellectual Property prior to any Publication, the publishing Party shall delay the Publication until such patent application(s) have been filed, provided that the other Party will cooperate in expeditiously filing any such patent application(s), and provided, further, that any such delay of a Publication will not exceed [***] days from the date of such notice by the other Party to the publishing Party. If the other Party believes that any Publication contains Confidential Information or other proprietary information belonging to such Party, such Party will notify the publishing Party, and the publishing Party will remove all references to such Confidential Information or proprietary information prior to publication, presentation or use.

8. Data.

8.1. Assignment and License Back of Data. All data and results (hereinafter "**Data**"), supplied to QIAGEN by Blueprint, or generated in any Clinical Trial (including, for example, all patient data), or generated by the Contract Laboratories for or on behalf of either or both Parties in the course of the Project under this Agreement, or generated by QIAGEN using the Materials shall be owned as follows:

(a) Blueprint shall own all "Clinical Data," which is defined as all [***] in connection with or otherwise arising out of clinical studies of Blueprint Products conducted by either Party under the Project; all data, information, results and reports relating to patient populations, therapy and therapeutic efficacy, including clinical outcome data (i.e., any data related to the performance of the Blueprint Product (e.g., safety, toxicity, etc.)) derived from any Materials, all as generated by or on behalf of either Party or both Parties during the course of performing the Activities under the Project and Project Schedule for the QIAGEN IVD. QIAGEN, as far as it is in the legal position to do so, hereby assigns and agrees to assign all of its right, title and interest in and to such Clinical Data to Blueprint, and if it not in a legal position to so assign, QIAGEN hereby grants and agrees to grant to Blueprint an exclusive, worldwide, irrevocable, perpetual, fully paid-up license to use the Clinical Data for any purpose. QIAGEN shall promptly provide to Blueprint copies of or access to all Clinical Data to which QIAGEN or its Affiliates have access, and all related supporting documentation, information, results and analyses with respect to QIAGEN's Activities under a Project or Project Schedule, when and as such Clinical Data become available.

(b) Blueprint shall own all "Blueprint Biomarker Data," which is defined as [***] relating to biomarkers (i) that are part of Blueprint Background Intellectual Property or (ii) that is generated by or on behalf of Blueprint or both Parties during the course of performing the Activities under the Project and Project Schedule. In addition, Blueprint shall own all [***]

relating to the Blueprint Product that is generated by or on behalf of either Party or both Parties during the course of performing the Activities under the Project and Project Schedule (the "Blueprint Product Data"). QIAGEN, as far as it is in the legal position to do so, hereby assigns and agrees to assign all of its right, title and interest in and to such Biomarker Data and Blueprint Product Data to Blueprint and if it not in a legal position to so assign, QIAGEN hereby grants and agrees to grant to Blueprint an exclusive, world-wide, irrevocable, perpetual, fully paid-up license to use the Blueprint Biomarker Data and Blueprint Product Data for any purpose. QIAGEN shall promptly provide to Blueprint copies of or access to all Blueprint Biomarker Data and Blueprint Product Data to which QIAGEN or its Affiliates have access, and all related supporting documentation, information, results and analyses with respect to QIAGEN's Activities under a Project or Project Schedule, when and as such Blueprint Biomarker Data and Blueprint Product Data become available. Blueprint hereby grants and agrees to grant to QIAGEN a non-exclusive, world-wide, sub-licensable, non-transferable (except as permitted under Section 18.6) and royalty-free license to all Blueprint Biomarker Data described in clause (ii) of the first sentence of this Section 8.1(b) for any purpose.

(c) QIAGEN shall own all "QIAGEN Biomarker Data," which is defined as [***] relating to biomarkers (i) that are part of QIAGEN Background Intellectual Property or (ii) that is generated by or on behalf of QIAGEN during the course of performing the Activities under the Project and Project Schedule. QIAGEN hereby grants and agrees to grant to Blueprint a non-exclusive, world-wide, sub-licensable, non-transferable (except as permitted under Section 18.6) and royalty-free license to all QIAGEN Biomarker Data described in clause (ii) of the first sentence of this Section 8.1(c) for any purpose.

(d) QIAGEN shall own all "Analytical Performance Data," which is defined as all [***] that are related to the analytical performance of the QIAGEN IVD under the Project, which includes but is not limited to: data to support development and optimization of the QIAGEN IVD, data to support the limit of detection, limit of blank, accuracy, cross reactivity, reproducibility and stability (for clarification, Clinical Data and Biomarker Data are specifically excluded from Analytical Performance Data), all as generated by or on behalf of either Party or both Parties during the course of performing the activities under the Project and Project Schedule for the QIAGEN IVD. QIAGEN shall be free to use the Analytical Performance Data for any purpose. Blueprint, as far as it is in the legal position to do so, hereby assigns and agrees to assign all of its right, title and interest in and to such Analytical Performance Data to QIAGEN and if it not in a legal position to so assign, Blueprint hereby grants to QIAGEN an exclusive, world-wide, irrevocable, perpetual, fully paid-up license to use the Analytical Performance Data for any purpose.

(e) Blueprint hereby grants and agrees to grant to QIAGEN a non-exclusive, world-wide, royalty-free license and right of reference (i) to the Clinical Data, with the right to sublicense to QIAGEN's Affiliates or any third party developing, obtaining Regulatory

Approval for, manufacturing or selling the QIAGEN IVD under the Project on behalf of QIAGEN for the sole and limited purpose of, and only to the extent required to carry out its Activities under the Project, including subsequent Commercialization of the QIAGEN IVD developed within the Project for use with the Blueprint Product and (ii) to the Biomarker Data generated by QIAGEN or by Blueprint in the conduct of the Project, and patent rights Controlled by Blueprint claiming inventions embodied by such Biomarker Data, with the right to sublicense to QIAGEN's Affiliates or any third party developing, obtaining Regulatory Approval for, manufacturing or selling any IVD in the Diagnostic Field for the sole and limited purpose of, and only to the extent required to carry out its Activities under the Project, including subsequent Commercialization of the QIAGEN IVD developed within the Project for use with the Blueprint Product. QIAGEN shall not use the Clinical Data or Biomarker Data for any purpose other than permitted in this Section 8.2 for as long as such Clinical Data or Biomarker Data constitutes Confidential Information.

(f) QIAGEN hereby grants Blueprint a non-exclusive license and right of reference to the Analytical Performance Data for the sole and limited purpose of, and only to the extent required to, carry out the Activities under the Project and research, develop and/or obtain Regulatory Approval for, make, have made, use, sell, offer for sale, import, export and commercialize Blueprint Products. The license shall not be sub-licensable except to any of Blueprint's Affiliates or any third party researching, developing, obtaining Regulatory Approval for, making, having made, using, selling, offering for sale, importing, exporting or commercializing the Blueprint Product, whether alone or in collaboration with Blueprint or any of its Affiliates.

(g) As between the Parties, all right, title and interest in and to the Materials is and shall remain the property of Blueprint.

9. Intellectual Property.

9.1. Background Intellectual Property. Each Party acknowledges and agrees that the other Party Controls certain Background Intellectual Property that relates to that Party's business or operations. Each Party further acknowledges and agrees that Background Intellectual Property Controlled by the other Party shall, as between the Parties, remain the exclusive property of the other Party.

Each Party hereby grants and agrees to grant to the other Party a non-exclusive, world-wide, sub-licensable, non-transferable (except as permitted under Section 18.6) and royalty-free license (or, with respect to certain QIAGEN Background Intellectual Property, sublicense, as applicable) under its Background Intellectual Property to the extent such license is necessary for the other Party to carry out its Activities under the respective Project, including subsequent Commercialization by QIAGEN of the QIAGEN IVD developed in the respective Project for use with the respective Blueprint Product and subsequent Commercialization by Blueprint of the Blueprint Product with the QIAGEN

IVD under this Agreement. For the avoidance of doubt, the Parties agree that the foregoing license does not provide QIAGEN have any right to promote or Commercialize a Blueprint Product or Blueprint have any right to promote or Commercialize an IVD or laboratory developed test.

Notwithstanding the foregoing, if Intellectual Property Controlled by a third party is included in the Background Intellectual Property of a Party, such Intellectual Property shall only be included into the license grant of this Section 9.1 paragraph 2, if (a) the other Party has committed in writing to comply with the relevant terms and conditions of the agreement with the third party and (b) if applicable, the Parties have agreed in writing on the allocation or sharing of any payment obligations towards the third party which may result from the other Party's use of the third party's Intellectual Property. Except as specified in any Project Schedule, the Parties agree that no sharing of any payment obligation is required with respect to any Intellectual Property Controlled by a third party that is included in either the QIAGEN Background Intellectual Property or the Blueprint Background Intellectual Property as of the Effective Date. In addition, if the relevant (license) agreement with such third party requires an allocation of Data and Foreground Intellectual Property or licenses deviating from Sections 9.2 and 9.3, (i) the Controlling Party shall inform the other Party hereof, (ii) upon request of the other Party to include such third party's Intellectual Property into the license grant under this Section 9.1, and (iii) the Parties shall negotiate in good faith provisions deviating from Sections 9.2 and 9.3 and set them forth in writing. For the avoidance of doubt, the foregoing shall also apply to third party Intellectual Property in the meaning of Article 4.

9.2. Foreground Intellectual Property. The Parties agree that any Foreground Intellectual Property shall be treated as follows:

(a) Blueprint Foreground Intellectual Property. Blueprint shall exclusively own all right, title and interest in and to any Foreground Intellectual Property relating to [***] (hereinafter "**Blueprint Foreground Intellectual Property**"). Blueprint hereby grants and agrees to grant to QIAGEN a non-exclusive, world-wide, royalty-free license, with the right to sublicense, under the Blueprint Foreground Intellectual Property solely for carrying out the Activities under the respective Project, including subsequent Commercialization of a QIAGEN IVD developed within a Project for use with the respective Blueprint Product. In addition, with respect to Blueprint Foreground Intellectual Property specified in Section 9.2(a)(ii), Blueprint hereby grants to QIAGEN a non-exclusive, world-wide, royalty-free license, during the Term, in the Diagnostic Field, for the purpose of developing and Commercializing an IVD under any Schedule.

(b) QIAGEN Foreground Intellectual Property. QIAGEN shall exclusively own all right, title and interest in and to any Foreground Intellectual Property relating to [***] (hereinafter "**QIAGEN Foreground Intellectual Property**"). QIAGEN hereby grants and agrees to

grant to Blueprint a non-exclusive, world-wide, royalty-free license, with the right to sublicense, under the QIAGEN Foreground Intellectual Property for carrying out the Activities under the respective Project, including subsequent Commercialization of the Blueprint Product with the QIAGEN IVD. For the avoidance of doubt, the Parties agree that the foregoing license may not be used by Blueprint to promote or Commercialize an IVD other than the QIAGEN IVD for use with the Blueprint Product or Blueprint Compound.

(c) Protection of either Party's Foreground Intellectual Property. QIAGEN will inform Blueprint about any Blueprint Foreground Intellectual Property and Blueprint will inform QIAGEN about any QIAGEN Foreground Intellectual Property, in each case, without unreasonable delay after it has been conceived by its respective employees, agents or consultants. The Parties shall take all legally required steps to ensure and effect the allocation of the Foreground Intellectual Property as provided in Sections 9.2(a) and 9.2(b) at the sole expense of the Party owning the Foreground Intellectual Property according to Sections 9.2(a) and 9.2(b), and the other Party shall provide reasonable assistance and all necessary documentation and declarations to perfect the rights in the Foreground Intellectual Property (*e.g.*, documents for proof of chain of title). In furtherance of the foregoing, QIAGEN hereby assigns to Blueprint all of its right, title and interest in any Blueprint Foreground Intellectual Property, and Blueprint hereby assigns to QIAGEN all of its right, title and interest in any QIAGEN Foreground Intellectual Property. Blueprint shall be responsible for the preparation, filing, prosecution and maintenance of the Blueprint Foreground Intellectual Property and Joint Foreground Intellectual Property. QIAGEN shall be responsible for the preparation, filing, prosecution and maintenance of the QIAGEN Foreground Intellectual Property.

(d) Defense and Enforcement. QIAGEN shall have the right, but no obligation, to control, enforce, and defend worldwide, at its own expense, Intellectual Property rights in QIAGEN Background Intellectual Property and QIAGEN Foreground Intellectual Property. Blueprint shall have the right, but no obligation, to control, enforce, and defend worldwide, at its own expense, Intellectual Property rights in Blueprint Background Intellectual Property and Blueprint Foreground Intellectual Property. With respect to any Joint Foreground Intellectual Property, the Parties will promptly thereafter consult and cooperate to determine a course of action, which may include, without limitation, the commencement of legal action by any or all of the Parties to terminate or otherwise address such infringement, misappropriation or misuse, and/or to defend the Joint Foreground Intellectual Property.

(e) Patent Term Restoration. The Parties agree to cooperate and to take reasonable actions to maximize the protections available under the safe harbor provisions of 35 U.S.C. 103(c) for United States patents and patent applications. The Parties shall cooperate with each other, including without limitation to provide necessary information and assistance as

another Party may reasonably request, in obtaining patent term restoration or supplemental protection certificates or their equivalents in any Market where applicable to the Foreground Intellectual Property.

9.3. Trademarks

(a) The Parties shall be responsible for the selection, registration and maintenance of their respective Blueprint Trademarks and QIAGEN Trademarks which they employ in connection with the marketing, sale or distribution of their products (i.e., the Blueprint Products and the QIAGEN IVD). The Parties shall own and control their respective Trademarks and pay all relevant costs thereto.

(b) Blueprint shall have the sole right to select the Blueprint Trademarks and shall own and retain all right, title and interest in and to such Blueprint Trademarks, and all goodwill associated with or attached to the Blueprint Trademarks arising out of the use thereof by Blueprint, its Affiliates and third party licensees shall inure to the benefit of Blueprint. Only Blueprint will be authorized to initiate at its own discretion legal proceedings against any infringement or threatened infringement of the Blueprint Trademarks.

(c) Blueprint shall be responsible for the registration, hosting, maintenance and defence of the Blueprint Domain Names. For the avoidance of doubts, Blueprint is allowed to register such Domain Names in its own name, to host on its servers, maintain and defend these Domain Names and use them for websites.

(d) QIAGEN shall have the sole right to select the QIAGEN Trademarks and shall own and retain all right, title and interest in and to such QIAGEN Trademarks, and all goodwill associated with or attached to the QIAGEN Trademarks arising out of the use thereof by QIAGEN, its Affiliates and third party licensees shall inure to the benefit of QIAGEN. Only QIAGEN will be authorized to initiate at its own discretion legal proceedings against any infringement or threatened infringement of the QIAGEN Trademarks.

(e) QIAGEN shall be responsible for the registration, hosting, maintenance and defence of the QIAGEN Domain Names. For the avoidance of doubts, QIAGEN is allowed to register such Domain Names in its own name, to host on its servers, maintain and defend these Domain Names and use them for websites.

(f) The Parties recognize the exclusive ownership of each other Party's Trademarks, logotype or trade dress furnished by such Party for use in connection with the marketing, sale or distribution of their respective products as defined in this Agreement. The Parties shall not, either while this Agreement is in effect, or at any time thereafter, register, use or challenge or assist others to challenge each other Party's Trademarks, logotype and trade dress furnished by each Party for use in connection with the marketing of the products as defined in this Agreement or attempt to obtain any right in or to any such name, logotype, trademarks or trade dress confusingly similar for the marketing of the products as defined

in this Agreement or any other goods and products, notwithstanding that such goods or products have a different use or are dissimilar to the products as defined in this Agreement.

(g) Each Party hereby grants and agrees to grant to the other Party a non-exclusive, world-wide, sub-licensable, non-transferable (except as permitted under Section 18.6) and royalty-free license under its Trademarks relevant for a Project to the extent such license is necessary for the other Party to carry out its Activities under the respective Project, including subsequent Commercialization by QIAGEN in accordance with Article 13 of this Agreement of the QIAGEN IVD developed in the respective Project for use with the respective Blueprint Product and subsequent Commercialization by Blueprint of the Blueprint Product with the QIAGEN IVD under this Agreement.

9.4. Notice of a Third Party's Claim of Intellectual Property Infringement. During a Project, the Parties will promptly notify each other of any claim by a third party of which it becomes aware alleging that the Development or Commercialization of the Blueprint Compound or QIAGEN IVD may or does infringe any Intellectual Property right Controlled by a third party.

9.5. Third Party Intellectual Property Licenses

(a) Licenses Relevant for the Blueprint Compound. For the avoidance of doubt, Blueprint shall be solely responsible, at its own discretion and expense, for obtaining and maintaining any other licenses or other rights to access or use any other third party Intellectual Property that is necessary for the development, manufacture, use or Commercialization of any Blueprint Product alone or, except to the extent described in Section 9.5(b), in combination with the QIAGEN IVD, including but not limited to treatment decisions derived from a diagnostic result and/or patient selection and/or stratification. QIAGEN agrees to cooperate reasonably with Blueprint to assist Blueprint's acquisition of any licenses that it is obligated to obtain pursuant to Section 9.5(a); [***].

(b) Licenses relevant for the QIAGEN IVD. QIAGEN shall have the option, but not the obligation, at its own discretion and expense, for obtaining and maintaining any licenses or other rights to access or use any third party Intellectual Property related solely to: [***]. In the event QIAGEN does not elect to obtain any such license within [***] days of first becoming aware of such third party Intellectual Property, Blueprint will have the right, but not the obligation, to obtain and maintain any such license.

(c) Licenses relevant to Biomarkers. Each Party shall have the option, but not the obligation, to obtain and maintain any licenses or other rights to access or use any third party Intellectual Property related to diagnostic use of a biomarker to the extent necessary for the development, manufacture, use or Commercialization by such Party of any product; provided that all such licenses or other rights entered into by such Party will be non-exclusive.

10. Clinical Trials.

10.1. QIAGEN Responsibilities. QIAGEN will develop the QIAGEN IVD for use as a companion diagnostic for the Blueprint Product and shall be responsible for (a) any testing of patient samples from the corresponding Clinical Trial with the QIAGEN IVD and (b) any other Activities related to the corresponding Clinical Trial with the QIAGEN IVD, in each case, as described in the applicable Project Schedule. QIAGEN shall conduct all such Activities for which it is responsible pursuant to this Section 10.1 as described under 21 C.F.R. § 812 and in accordance with the applicable Project Schedule. QIAGEN will bear responsibility for meeting all applicable regulatory requirements for the development and manufacture of the QIAGEN IVD in the United States and in any other Markets in which the QIAGEN IVD is used as part of a Clinical Trial. QIAGEN will promptly provide to Blueprint notice and a description of material progress and developments under all such clinical studies.

10.2. Blueprint Responsibilities. Blueprint will have sole responsibility for the control and direction of the conduct of all Clinical Trials for each Blueprint Product, including through the use of contract research organizations, in its sole discretion. Other than those Clinical Trials that are to be performed in whole or in part by QIAGEN pursuant to a Project Schedule, the conduct of all Clinical Trials by Blueprint will not be governed by or included within the scope of this Agreement.

11. Regulatory Matters. In the applicable Project Schedule, the Parties shall agree to the jurisdictions in which QIAGEN is required to seek Regulatory Approval for the QIAGEN IVD. QIAGEN will be the sponsor of, and bear all responsibility for the submission of, all PMAs required for the QIAGEN IVD, as set forth in the Project Schedule and with reasonable cooperation and support from Blueprint as appropriate. QIAGEN shall have the primary responsibility to make regulatory submissions and shall remain solely responsible for all interactions with Regulatory Authorities, but shall (a) reasonably consult with Blueprint as to the portions of the submission that refer to the Blueprint Product, (b) incorporate all of Blueprint's reasonable comments on such submissions that refer to the Blueprint Product and (c) shall keep Blueprint reasonably informed regarding the status and progress of all regulatory activities regarding obtaining Regulatory Approval of the QIAGEN IVD, including as promptly as reasonably practicable, providing Blueprint with a copy of all material written correspondence (including final meeting minutes) and informing Blueprint of all material verbal communications from or to any Regulatory Authority involving obtaining Regulatory Approval of the QIAGEN IVD or any regulatory submission contemplated by this Agreement. In addition, QIAGEN shall provide Blueprint with a copy of all final regulatory submissions (or applicable portions thereof), filings or other material documentation provided from or to any Regulatory Authority as contemplated by this Agreement that refer to the Blueprint Product, after submission to the relevant Regulatory Authority and promptly inform Blueprint regarding the receipt or

denial of Regulatory Approval for the use of the QIAGEN IVD in connection with the Blueprint Product. In addition QIAGEN will, at Blueprint's request, permit Blueprint to participate with QIAGEN in preparations for any substantive correspondence, communications or meetings with Regulatory Authorities and participate in and observe those portions of any substantive correspondence, communications or meetings with Regulatory Authorities, in each case, where the anticipated focus of such correspondence, communication or meeting is related to use of the QIAGEN IVD in connection with a Blueprint Product, to the extent permitted by any applicable law.

12. Manufacture and Supply of IVDs.

12.1. QIAGEN Responsibilities. QIAGEN shall be solely responsible for the manufacture of, and shall use Commercially Reasonable Efforts to manufacture, QIAGEN IVDs. QIAGEN shall manufacture the QIAGEN IVDs in compliance with cGMP requirements. Until [***] of a QIAGEN IVD, QIAGEN shall ensure that [***] supplies of the QIAGEN IVD (or prototypes) and all other components of the QIAGEN IVD Platform are each made available to Blueprint, any Contract Laboratories and any Clinical Trial sites, in each case according to the terms set forth in Section 5.2(c) and the Project Schedule. Subject to receiving sufficient notice of required quantities from Blueprint, QIAGEN shall ensure that it maintains [***] inventories of each component of the QIAGEN IVD Platform as is necessary for the complete conduct of the Clinical Trials of the applicable Blueprint Product. QIAGEN shall be responsible for the transfer of the QIAGEN IVD or the prototypes thereof, and all other components of the QIAGEN IVD Platform, to the Contract Laboratories and, to the extent necessary, any Clinical Trial sites involved in the Clinical Trials (*provided that* [***]). Within [***] prior to launch of a Blueprint Product, with [***] advance written notice by Blueprint of such launch, QIAGEN will build up and maintain [***] an inventory of QIAGEN IVDs which shall be [***] to satisfy the Commercialization requirement, and will ensure that all other components included in the QIAGEN IVD Platform are [***] to satisfy such Commercialization requirement. The Parties will work together in good faith in advance of such launch to determine quantities of QIAGEN IVDs necessary for launch and ongoing Commercialization of a Blueprint Product.

12.2. Security of Supply. QIAGEN will take the following actions to minimize the risk of an Inability to Supply occurring:

(a) Alternate Manufacturing Facilities and Manufacturers. Exhibit A sets forth QIAGEN's business continuity plan for supplying the QIAGEN IVD for both the Clinical Trials and during Commercialization.

(b) Safety Stock. QIAGEN shall use its [***] ensure that it maintains [***] inventories of the QIAGEN IVD (including the various components within the QIAGEN IVD Platform that are manufactured by QIAGEN) as is necessary for (i) [***], and (ii) [***]. QIAGEN shall

be responsible for the transfer of the QIAGEN IVD or the prototypes thereof to the Contract Laboratories involved in any such Clinical Trials at Blueprint's expense.

13. Commercialization of the QIAGEN IVD.

13.1. General Principles. The Parties agree that the ultimate goal of each Project conducted under this Agreement is the manufacture and Commercialization of a QIAGEN IVD used in connection with the Blueprint Product. The determination of whether and to what extent and in which countries or territories the Blueprint Product shall be Commercialized shall be within Blueprint's sole discretion. To the extent that Blueprint desires that QIAGEN conduct additional Commercialization activities beyond those activities that [***], then such additional Commercialization activities will be outlined in the Commercialization Project Schedule. To the extent Blueprint Commercializes a Blueprint Product in certain countries or territories, within a reasonable notification period QIAGEN shall Commercialize the corresponding QIAGEN IVD and shall supply all other components in the QIAGEN IVD Platform in each [***], and shall, subject to Section 13.2, Commercialize such QIAGEN IVD and supply all other components in the QIAGEN IVD Platform in such other markets to the extent set forth in this Agreement and the applicable Project Schedule.

13.2. Commercialization Obligations. QIAGEN shall, and shall be responsible to, manufacture and Commercialize or have manufactured and Commercialized by an authorized subcontractor the QIAGEN IVD according to the terms and conditions herein. Within the timeframe set forth in the relevant Project Schedule, QIAGEN shall prepare and the Parties (acting through the JSC) shall agree upon commercialization activities relating to the launch, marketing and sale of the QIAGEN IVD in the Markets in accordance with its customary commercial practices, and QIAGEN shall be responsible to manufacture and Commercialize or have manufactured and commercialized the QIAGEN IVD and to supply all other components in the QIAGEN IVD Platform according to such Commercialization activities and its customary commercial practices for a product of a similar net present value and potential market value in the Markets identified in a Project Schedule. At least [***] prior to the commercial launch of the Blueprint Product in a given Market, QIAGEN shall use Commercially Reasonable Efforts: (a) to ensure the [***] availability of the QIAGEN IVD Platform for purchase in the Markets for use in connection with the initiation and ongoing treatment of patients with the Blueprint Product in accordance with forecasts to be provided by Blueprint and (b) to seek any necessary reimbursement approvals for the QIAGEN IVD from Governmental Authorities and other third party payors in each of the [***] (provided that [***]). With respect to each [***], QIAGEN shall at all times keep the QIAGEN IVD commercially available if the labelling for the Blueprint Product in such [***] requires that an IVD be administered to a potential patient prior to a physician prescribing the applicable Blueprint Product. With respect to any Market that is not a [***], QIAGEN shall provide Blueprint with [***] written notice prior to the anticipated

commercial launch of the Blueprint Product in the event that QIAGEN reasonably determines that it is not commercially reasonable to Commercialize the QIAGEN IVD in such Market, which notice shall include a detailed summary of the basis therefor. During such [***] period, QIAGEN shall use Commercially Reasonable Efforts to procure alternative channels of distribution and make available or procure the making available of the QIAGEN IVD in such quantities and upon commercially reasonable terms in each case as necessary to [***] enable Blueprint to market the Blueprint Product in conjunction with the QIAGEN IVD.

13.3. Diagnostics Reimbursement. In the event QIAGEN conducts Activities relating to health insurance reimbursement for the QIAGEN IVD, such Activities shall be outlined in a Commercialization Project Schedule and to the extent these Activities are agreed by the Parties to be performed at QIAGEN's sole cost and expense, then QIAGEN shall have discretion as to the conduct and scope of such Activities, provided that, [***], it shall price the QIAGEN IVD [***]. To the extent Blueprint requests additional reimbursement Activities beyond those outlined in the applicable Commercialization Project Schedule, [***].

13.4. Medical Affairs Activities. In the event the Parties agree to conduct Activities relating to medical affairs activities for the QIAGEN IVD, such Activities shall be outlined in a Commercialization Project Schedule with reasonable timelines agreed by QIAGEN and shall be at QIAGEN's sole cost and expense.

14. Governance.

14.1. Joint Steering Committee. Within [***] days after the execution of a Project Agreement, the Parties shall form a Joint Steering Committee (the "**JSC**") to facilitate the transfer of information and coordinate processes related to the development, Regulatory Approval and Commercialization of the Blueprint Product and the QIAGEN IVD being the subject of the relevant Project Agreement. The JSC shall be composed of three representatives appointed by each Party, at least two (2) of whom shall be different than members of the JPT. Each representative shall be appointed (and may be replaced at any time) by a Party upon prior written notice to the other Party. These representatives shall have appropriate experience, knowledge, and ongoing familiarity with the Projects in their then current phases.

14.2. Responsibilities. The JSC's responsibilities shall include, but not be limited to, the following functions:

(a) Facilitating the transfer of information and data related to the Development, Commercialization and Regulatory Approval process;

(b) Approval of the scope and content of additional Project Schedules, including any amendments, modifications or changes to Project Schedules (including, without limitation, any amendments, modifications or changes to budgets or timelines set forth therein)

(provided that final approval and execution of each such agreement remains subject to the discretion of the authorized representatives of each Party);

(c) Approvals or determinations with respect to any matters escalated to the JSC by the JPT pursuant to Section 14.5(f);

(d) Determining the strategy for any substantive correspondence, communications or meetings with Regulatory Authorities;

(e) Facilitating the cooperation of the Parties, when requested, to provide information and support;

(f) Facilitating coordinated interpretation of data;

(g) Coordination of planned marketing activities; and

(h) Taking such other actions as may be specifically allocated to the JSC by the Parties from time to time.

Except as set forth in Section 14.2(b), Section 14.2(c) and Section 14.2(d), the JSC shall, however, not have any decision-making authority.

14.3. Meetings. The JSC shall meet (either in person, telephonically or via video conference) not less than twice per year or at such greater frequency as agreed by the respective committee members. Meetings of the JSC shall be at such locations as the Parties agree. Additional representatives of the Parties may from time to time be invited to attend JSC meetings, subject to the other Party's prior consent which shall not be unreasonably withheld. The chair of the JSC shall alternate between a representative of Blueprint and a representative of QIAGEN. All decisions require the approval of a majority of each Party's representatives to the JSC.

14.4. Joint Project Team.

Within [***] days after execution of a Project Agreement the Parties will, in addition to the JSC, form a joint project team (the "**Joint Project Team**" or "**JPT**"), which shall be responsible to facilitate the operational tasks and provide updates on the status of the Development Project. Members of the JPT can include but shall not be limited to representatives with expertise in research biology, translational medicine, clinical, regulatory, and/or product development. Each Party will designate a representative as JPT Lead. Such JPT shall meet, either in person, via telephone or video conferences, on a regular basis, however, at least once per month.

14.5. Joint Project Team Responsibilities. The JPT's primary responsibilities shall include, but shall not be limited to, the following functions or roles:

(a) Serving as technical lead and principal point of contact for all matters related to the Project Schedule;

(b) Overseeing project planning and progress and coordinating all activities related to the Project Schedule;

(c) Recommending updates to the Project Schedule including tactics and risk mitigation to the JSC;

(d) Leading meetings (at least monthly) to facilitate review and coordinated interpretation of data, information sharing, and timeline monitoring;

(e) Preparing for any substantive correspondence, communications or meetings with Regulatory Authorities and coordinating with the JSC with respect to the strategy for such correspondence, communications or meetings; and

(f) Facilitating issue resolution at the Team level and escalating issues to the JSC.

14.6. Joint Commercialization Committee.

At least [***] prior to the commercial launch of the QIAGEN IVD, the Parties will form a joint commercialization team (the "**Joint Commercialization Committee**" or "**JCC**"). The JCC will [***] discuss a coordinated approach for the sales and marketing of the QIAGEN IVD and Blueprint Product. Such JCC shall be constituted and shall operate as the JSC determines and as may be outlined in the Project Schedule. In addition, the JCC shall be responsible for: (a) facilitating the transfer of information and coordination of processes related to the Commercialization of the Blueprint Product and QIAGEN IVD; (b) reviewing each Commercialization Schedule prior to submission to the JSC for approval; (c) coordinating planned sales and marketing activities, including launch strategies for the Markets, sales force activities, marketing strategies, alignment of package inserts, instructions for use, data sheets, marketing material, publications, training activities, reimbursement strategies, sharing of market research information and use of advisory boards/key opinion leaders; and (d) forecasting and measuring sales and distribution data to ensure adequate supply of the QIAGEN IVD in each Market.

15. Termination.

15.1. Termination without Cause. Blueprint may terminate this Agreement or a Project Schedule for any Project, for any reason or no reason, at any time upon (a) thirty (30) days' prior written notice if such termination is due to Blueprint's cessation of further development of a Blueprint Product and (b) one hundred twenty (120) days' prior written notice to QIAGEN in the event of any other termination.

15.2. Termination For Cause.

(a) Either Party may terminate this Agreement upon thirty (30) days' notice if the other Party commits a material breach of the Agreement and fails to cure such breach within the notice period. For clarity, a breach that is specific to a Project shall not serve to terminate this Agreement, but shall be addressed as set forth below.

(b) Either Party may terminate a Project Schedule or Commercialization Project Schedule, as the case may be, upon thirty (30) days' notice if the other Party commits a material breach of the Project Schedule and fails to cure such breach within the notice period.

(c) Either Party may terminate this Agreement and any Project Schedules immediately by written notice to the other Party, if the other Party becomes insolvent, makes or has made an assignment for the benefit of creditors, is the subject of proceedings in voluntary or involuntary bankruptcy instituted on behalf of or against it (except for involuntary bankruptcies which are dismissed within ninety (90) days) or has a receiver or trustee appointed for substantially all of its property.

15.3. Effects of Termination For Cause by Blueprint.

In the event of a termination for cause by Blueprint under Section 15.2, with regard to the terminated Project(s):

(a) the Parties shall promptly meet to prepare a close-out Project Schedule;

(b) any intellectual property licenses granted by either Party under this Agreement shall terminate upon the effective date of such termination. For clarification, the licenses to Data under Section 8.1 shall survive any expiration or termination of this Agreement or a Project;

(c) Blueprint shall make a final payment to QIAGEN for: (i) any project-specific inventory of the QIAGEN IVD maintained in accordance with this Agreement to the extent that QIAGEN is unable to use such inventory for other commercial purposes; and (ii) any pass-through costs that were already paid, or ordered and unable to be cancelled by QIAGEN pursuant to the Project Schedule or as otherwise authorized by Blueprint; provided that QIAGEN provide to Blueprint documentation evidencing to Blueprint's reasonable satisfaction that such costs were already paid, or are uncancellable.

(d) Subject to Blueprint compensating QIAGEN for the financial obligations set forth in Section 15.3(c), if requested by Blueprint, QIAGEN shall fully cooperate with Blueprint, at Blueprint's reasonable request and expense to develop and implement a wind-down plan for the Project(s) including, where appropriate, [***] transition under the terms and conditions set forth in this Agreement, [***]. For clarification, [***] shall include [***] and shall in any case include [***] to Blueprint, [***] of the regulatory documentation and to the extent QIAGEN is able, any marketing authorizations for the QIAGEN IVD and all other QIAGEN documentation supporting the QIAGEN technology and QIAGEN IVD Platform in sufficient detail as necessary to enable the manufacture and marketing by Blueprint [***] of a QIAGEN IVD meeting [***] specifications as those set forth in the relevant Project and shall and hereby does include a non-exclusive, world-wide, license to: QIAGEN's Background Intellectual Property, QIAGEN Foreground Intellectual Property (under the Control of QIAGEN); all as specifically related to and necessary for the

research, develop and/or obtain Regulatory Approval for, make, have made, use, sell, offer for sale, import, export and commercialize of an IVD meeting [***] specifications as those set forth in the relevant Project Schedule. The foregoing license shall be sub-licensable [***], provided that Blueprint may [***] All sub-licenses by Blueprint shall be "first-tier," meaning the sublicensee shall have no further right to sublicense. In addition, the foregoing license to Blueprint shall be fully paid-up and royalty-free as between Blueprint and QIAGEN and its Affiliates, but to the extent the license includes any third party intellectual property under the Control of QIAGEN, the license to which imposes a royalty obligation to such third party, Blueprint shall be responsible for payment of such royalties pursuant to its terms and in cooperation with QIAGEN; and

(e) Blueprint shall have the right to issue a last order within [***] days as of the effective date of termination and QIAGEN shall transfer to Blueprint, within the normal lead time for the quantity ordered after receipt of such last order from Blueprint, the quantities of QIAGEN IVDs as ordered by Blueprint to enable Blueprint to complete the respective Clinical Trial(s), whereas Blueprint shall pay for such QIAGEN IVDs [***].

15.4. Effects of Termination Without Cause by Blueprint or For Cause by QIAGEN.

In the event of a termination without cause by Blueprint under Section 15.1 or of a termination for cause by QIAGEN under Section 15.2, with regard to the terminated Project(s):

(a) the Parties shall promptly meet to prepare a close-out Project Schedule;

(b) Blueprint shall make a final payment to QIAGEN for: (i) a pro rata portion of any future Milestone payments where work was properly performed toward the agreed milestone(s) prior to the date of the termination notice; (ii) any project-specific inventory of the QIAGEN IVD maintained in accordance with this Agreement to the extent that QIAGEN [***]; and (iii) any pass-through costs that were already paid, or ordered and unable to be cancelled, by QIAGEN pursuant to the Project Schedule or as otherwise authorized by Blueprint;

(c) any intellectual property licenses granted by either Party under this Agreement shall terminate upon the effective date of such termination. For clarification, the licenses to Data under Section 8.1 shall survive any expiration or termination of this Agreement or a Project; and

(d) Blueprint shall reimburse QIAGEN's costs in winding down the Project and reallocating employees, which shall be calculated as follows: An amount equal to the number of QIAGEN personnel who were actively engaged in performing Activities in support of the Development Project at the time of termination, multiplied by the percentage of their time allocated to the Development Project at that time, multiplied by a daily FTE rate of [***] for the period of Business Days from the date of notice of termination until the date the

QIAGEN personnel are reallocated to other activities or projects, not to exceed [***] days regardless of whether such termination is due to Blueprint's cessation of further development of a Blueprint Product or for any other termination without cause by Blueprint pursuant to Section 15.1 or for cause by QIAGEN pursuant to Section 15.2; [***].

15.5. Return of Materials and Confidential Information. At the earlier of completion or termination of a particular Project (or this Agreement as a whole), and except as otherwise permitted herein, each Party shall destroy, or return at the other Party's expense and election, Materials and Confidential Information of the other Party. A Party may retain one copy of Confidential Information of the other Party for the purpose of evidence. The return or destruction of Materials and Confidential Information will not affect the receiving Party´s obligation to observe the non-use and confidentiality restrictions set out in this Agreement. The provisions of this Section 15.5 shall not apply to copies of electronically exchanged Confidential Information made as a matter of routine information technology backup and to Confidential Information or copies thereof which must be stored by the receiving Party according to provisions of mandatory law.

15.6. Survival. Termination or expiration of this Agreement will not relieve either Party of any liability which accrued hereunder prior to the effective date of such termination, nor preclude either Party from pursuing all rights and remedies it may have hereunder at law or in equity with respect to any breach of this Agreement, nor prejudice either Party's right to obtain performance of any obligation arising hereunder. Section 1.1 (Definitions), Section 4.5 (Financial Records), Article 6 (Financial Terms), Article 7 (Confidentiality), Section 8.1 (Assignment and License Back of Data), Article 9 (Intellectual Property), Article 15 (Termination), Article 16 (Warranties and Disclaimers), Article 17 (Indemnification, Liability and Insurance) and Article 18 (Miscellaneous) shall survive any termination or expiration of this Agreement. In addition, any other provisions which by their nature are understood to survive the termination or expiration of this Agreement shall so survive.

16. Warranties and Disclaimers.

16.1. General Warranties. Each Party hereby represents and warrants to the other Party as of the Effective Date that: (a) it is a corporation duly organized, validly existing, and in good standing under applicable laws, rules and regulations, (b) it has obtained all necessary consents, approvals and authorizations of all governmental authorities (both inside and outside the Markets) and other persons required to be obtained by it in connection with this Agreement, (c) the execution, delivery and performance of this Agreement have been duly authorized by all necessary corporate action on its part, and (d) it has, to its knowledge, the right to grant the applicable rights and licenses provided for under this Agreement.

16.2. No Inconsistent Agreements. Each Party hereby represents, warrants and covenants to the other Party that during the Term of a Project it will not grant or convey to any third party

any right, license or interest in any Intellectual Property that is inconsistent with the rights and licenses expressly granted to the other Party under this Agreement with respect to the relevant Project.

16.3. No Debarment or Prohibited Payments. Each Party hereby certifies that it will not employ or otherwise use and has not employed or used in any capacity the services of any person (a) debarred by, or (b) to the best of the respective Party's knowledge, currently subject to a debarment procedure by the FDA under Title 21 United States Code Section 335a or any other competent authority in performing any activities under this Agreement. Each Party further represents and warrants that in connection with the subject matter of this Agreement: (i) none of its employees, agents, officers or directors is a Foreign Official as defined in the U.S. Foreign Corrupt Practices Act, (ii) it will not make, accept or request any payment, either directly or indirectly, of money or other assets to any third party where such payment would constitute violation of any law, including the U.S. Foreign Corrupt Practices Act and the UK Bribery Act 2010, (iii) regardless of legality, it shall neither make, accept nor request any such payment for the purpose of improperly influencing the decisions or actions of any third party, and (iv) it shall report any suspected or actual violation of this Section 16.3 to the other Party upon becoming aware of the same.

16.4. Compliance.

(a) Each Party shall perform all work performed as part of the contractual relationship with the other Party in a manner consistent with all applicable laws and regulations, including, but not limited to, all applicable anti-bribery and antitrust laws. To the extent related to this Agreement, each Party represents and warrants that it has not made or provided, and will not make or provide, any payment or benefit, directly or indirectly, to government officials, customers, business partners, healthcare professionals or any other person in order to secure an improper benefit or unfair business advantage, affect private or official decision-making, affect prescription behaviour, or induce someone to breach professional duties or standards.

(b) Each Party will immediately report to the other Party in writing any suspected or detected violation of the above principles in connection with the other Party's business and, in such cases, will cooperate fully with the other Party in reviewing the matter. In the event that a Party believes, in good faith, that the other Party has violated any of the above principles; then such Party shall have the unilateral right to terminate the contractual relationship with the other Party with immediate effect.

(c) During the Term and for the one (1) year period following the termination or expiration of this Agreement, each Party through a mutually agreeable, independent third party auditor, upon reasonable advance notice to and at the auditing Party's sole expense, shall have the right during normal business hours to examine and review such books, records, and other documents and materials, except individual salary information, for the sole purpose of

verifying whether the other Party has complied with the compliance obligations stated in this Section 16.4.

16.5. Disclaimers. THE REPRESENTATIONS AND WARRANTIES SET FORTH ABOVE ARE IN LIEU OF ANY AND ALL OTHER WARRANTIES AND REPRESENTATIONS, EXPRESS, IMPLIED, OR STATUTORY, AND EACH PARTY HEREBY DISCLAIMS ANY AND ALL WARRANTIES OR REPRESENTATIONS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR FOR NON-INFRINGEMENT OF A PATENT, TRADEMARK OR OTHER INTELLECTUAL PROPERTY RIGHTS.

17. Indemnification, Liability and Insurance.

17.1. Indemnification by QIAGEN. QIAGEN shall defend, indemnify and hold harmless each of Blueprint, its Affiliates and their respective directors, officers, employees and agents, together with the successors and assigns of any of the foregoing (each, a "Blueprint Indemnitee") from and against any and all third party claims, suits, actions, demands or judgments (collectively, "Claims") and any and all resultant liabilities, damages, settlements, penalties, fines, costs or expenses (including reasonable attorneys' fees) ("Liabilities") to the extent that such Claims and Liabilities arise out of, or in connection with: (a) a QIAGEN Indemnitee's negligence or willful misconduct, (b) a QIAGEN Indemnitee's violation of applicable law, rule or regulation, (c) the breach by QIAGEN of any of its representations, warranties and/or covenants under Article 16 or any Project Schedule, (d) personal injury or death caused by QIAGEN's [***] of the Materials in violation of this Agreement, (e) personal injury or death caused by the defective design or manufacture of a QIAGEN IVD hereunder and (f) the infringement of third party Intellectual Property as a result of the manufacture or Commercialization of any QIAGEN IVD (other than [***]); provided, however, that QIAGEN's obligations under this Article 17 shall be excused to the extent that such Liabilities arise out of a Claim to which a QIAGEN Indemnitee is entitled to indemnification under Section 17.2.

17.2. Indemnification by Blueprint. Blueprint shall defend, indemnify and hold harmless each of QIAGEN, its Affiliates, and their respective directors, officers, employees and agents, together with the successors and assigns of any of the foregoing (each, a "QIAGEN Indemnitee") from and against any and all Claims and Liabilities that arise out of: (a) a Blueprint Indemnitee's negligence or willful misconduct, (b) a Blueprint Indemnitee's violation of applicable law, rule or regulation, (c) the breach by Blueprint of any of its representations, warranties and or covenants under Article 16 or any Project Schedule, and (d) personal injury or death caused by the defective design or manufacture of a Blueprint Product, (e) [***] occurring in connection with the Clinical Trials of a Blueprint Product, and (f) the infringement of third party Intellectual Property as a result of the manufacture

or Commercialization of any Blueprint Product [***]; provided, however, that Blueprint's obligations under this Section 17.2 shall be excused to the extent that such Liabilities arise out of a Claim to which a Blueprint Indemnitee is entitled to indemnification under Section 17.

17.3. Procedure. A Party seeking indemnification or reimbursement hereunder shall give the other Party prompt written notice of any such claim or law suit (including a copy thereof) served upon it and shall fully cooperate with the indemnifying Party and its legal representatives in the investigation of any matter the subject of indemnification. The indemnified Party shall have no right to tender an appearance in the proceedings. The indemnifying Party shall have full control over the proceedings, including but not limited to, selection of counsel to tender appearance for the indemnifying Party and for the indemnified Party. The indemnified Party shall promptly sign any and all reasonably necessary documents for the selection of counsel, such as a joint defense agreement, and shall not unreasonably withhold its consent to conflict waivers. The indemnified Party's attorney's fees shall be limited to those necessary for complying with the indemnifying Party's requests for support that necessarily call for the use of the indemnified Party's counsel (e.g., preparing a witness for deposition). The Party seeking indemnification shall not unreasonably withhold its approval of the settlement of any claim, liability, or action covered by Section 17.1 or 17.2, as applicable, will cooperate with counsel of the indemnifying or reimbursing Party, and reserves the right to engage its own counsel to assist in the defense at its own expense.

17.4. Settlements. Neither Party may enter into any settlement, consent judgment or other voluntary final disposition of any Claim and/or Liability for which an Indemnitee seeks indemnification hereunder without the prior written consent of the other Party, such consent not to be unreasonably withheld.

17.5. Limitation of Damages. EXCEPT WITH RESPECT TO A PARTY'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, OR A BREACH OF ITS OBLIGATIONS UNDER ARTICLE 7, NEITHER PARTY WILL BE LIABLE TO THE OTHER FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL, EXEMPLARY, PUNITIVE, MULTIPLE OR OTHER SIMILAR DAMAGES, OR FOR ANY CLAIMS FOR LOST PROFITS OR REVENUES, ARISING FROM OR RELATING TO THIS AGREEMENT; PROVIDED, HOWEVER, THAT THIS SHALL NOT LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY WITH RESPECT TO ANY THIRD PARTY CLAIMS UNDER THIS ARTICLE 17.

17.6. Insurance. During the Term and until completion of the last Project conducted under this Agreement, each Party shall maintain a comprehensive commercial general liability insurance program as is customary for diagnostic or pharmaceutical companies (as the case

may be), including product liability insurance with coverage limits not less than [***] for each occurrence and in the aggregate. All insurers utilized to confirm coverage within Section 17.6 shall be rated A, Class VII or better by A.M. Best Company in a form satisfactory to both Parties. Upon request, each Party will provide to the other Party respective insurance certificates. For clarification, the insurance coverage required herein may be provided through any reasonable structure of local and global insurance programs.

18. Miscellaneous.

18.1. Force Majeure. Neither Party shall be liable for failure or delay in performance under this Agreement due to causes such as an act of God, strike, lockout or other labor dispute, civil commotion, sabotage, fire, flood, explosion, acts of any government, any other similar causes not within the reasonable control of the Party affected (a "**Force Majeure Event**"). In the event either Party is unable to perform any of its obligations hereunder due to a Force Majeure Event, such Party shall promptly notify the other Party. Performance hereunder shall be promptly resumed after the applicable Force Majeure Event has been remedied.

18.2. Notices. All notices under this Agreement shall be in writing and shall be sent by registered or certified mail, postage prepaid, or by overnight courier service, to the attention of the Legal Department at the addresses of the respective Parties set forth in the first paragraph of this Agreement.

18.3. Governing Law and Disputes.

(a) Law. The formation, existence, performance, validity and all aspects of this Agreement shall be governed by and construed in all respects in accordance with the laws of Delaware without regard to its rules on conflicts of laws.

(b) Dispute Resolution. Prior to arbitration, the parties shall seek informal resolution of disputes. The process shall be initiated with written notice of one Party to the other, describing the dispute with reasonable particularity followed with a written response within ten (10) calendar days of receipt of notice.

(i) Any disputes with respect to matters within the scope of authority of the JSC (including any matters submitted to the JSC for resolution pursuant to Section 14.5(e)) or within the scope of authority of the JCC, in each case, that cannot be resolved within [***] days after good faith efforts by the Parties will be submitted to the Parties' executives for resolution pursuant to Section 18.3(b)(iii).

(ii) Upon submission of a dispute pursuant to Section 18.3(b)(i), each Party shall promptly designate an executive with requisite authority to resolve the dispute. The informal procedure shall commence within [***] days of the date of the submission of the dispute by the JSC (if applicable) or the date of response (if not submitted to the JSC). If a dispute submitted to the Party's executives pursuant to Section 18.3(b)(iii) is not resolved within [***] days of the date of commencement of the

procedure, either Party may proceed to binding arbitration without recourse to the ordinary courts of law according to the American Arbitration Association, Commercial Arbitration Rules (the "**Rules**").

(iii) For any matter submitted to arbitration pursuant to Section 18.3(b)(ii), the seat of arbitration shall be Washington, DC. The number of arbitrators shall be three (3). The arbitrators shall be appointed in accordance with the Rules. The language to be used in the arbitration proceedings shall be English. If any arbitration is brought for the enforcement of this Agreement, or because of any alleged dispute, breach, default or misrepresentation in connection with any of the provisions of this Agreement, the successful or prevailing Party shall be entitled to recover reasonable attorneys' fees and other costs incurred therein, in addition to any other relief to which it or they may be entitled.

(iv) Notwithstanding anything to the contrary in this Section 18.3(b), if either Party in its sole judgment believes that any breach of this Agreement could cause it irreparable harm, such Party (i) will be entitled to seek equitable relief in order to avoid such irreparable harm, and (ii) will not be required to follow the procedures set forth in this Section 18.3(b) with respect to seeking such relief.

18.4. Entire Agreement. This Agreement sets out the entire agreement and understanding between the Parties regarding the subject matter of this Agreement and supersedes all prior discussions, arrangements and agreements, whether oral or in writing or which may be inferred from the conduct of the Parties.

18.5. Validity/Severability. The invalidity or unenforceability of any provision of this Agreement shall not affect the validity or enforceability of any other provision which shall remain in full force and effect. The Parties undertake to replace such invalid or unenforceable provision by a valid and enforceable provision which accomplishes as far as possible the purpose and the intent of the invalid or unenforceable provision.

18.6. Assignment. This Agreement may be freely assigned or otherwise transferred by either Party to any of its' Affiliates. This Agreement shall not be assigned or otherwise transferred by either Party to a third party, except (a) with the other Party's prior written approval, which approval shall not be withheld unreasonably, or (b) by reason of any (i) merger, acquisition, reorganization, or consolidation to any successor in interest of the business or assets to which this Agreement relates or (ii) the sale, license or other transfer to a third party of all or substantially all of the business or assets to which this Agreement relates. Other than as provided by this Section 18.6, any attempt by either Party to effect an assignment or other transfer of this Agreement without the consent of the other Party will be void and without effect.

18.7. No Third Party Beneficiaries. No person other than Blueprint or QIAGEN (and their respective affiliates and assignees) shall be deemed an intended beneficiary hereunder or have any right to enforce any obligation of this Agreement.

18.8. Waiver; Modification of Agreement. No waiver, amendment, or modification of any of the terms of this Agreement shall be valid unless in writing and signed by authorized representatives of both Parties. Failure by either Party to enforce any rights under this Agreement shall not be construed as a waiver of such rights nor shall a waiver by either Party in one or more instances be construed as constituting a continuing waiver or as a waiver in other instances. Any amendments to this Agreement shall be made in writing; the same applies for any waiver or amendment of this written form clause.

18.9. Relationship of the Parties. The relationship of the Parties is that of independent contractors.

18.10. Independent Development. Nothing in this Agreement will be construed as restricting either Party's ability to acquire, license, develop, manufacture or distribute for itself, or have others acquire, license, develop, manufacture or distribute for such Party, similar technology performing the same or similar functions as the technology contemplated by this Agreement, or to market and distribute such similar technology in addition to, or in lieu of, the technology contemplated by this Agreement, provided, however, that such activities of such Party comply with all provisions herein.

18.11. Counterparts and Signatures. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which will together be deemed to constitute one agreement. The Parties agree that the execution of this Agreement by exchanging pdf signatures, and/or by industry standard electronic signature software, shall have the same legal force and effect as the exchange of original signatures. In any proceeding arising under or relating to this Agreement, each Party hereby waives any right to raise any defense or waiver based upon execution of this Agreement by means of such electronic signatures or maintenance of the executed agreement electronically.

[Signature page follows]

IN WITNESS WHEREOF, QIAGEN and Blueprint, intending to be legally bound, have executed this Agreement at the dates indicated below by their respective duly authorized representatives.

Blueprint Medicines Corporation		**QIAGEN Manchester Limited**	
By:	/s/ Jeffrey W. Albers	By:	/s/ Douglas Liu
Name:	Jeffrey W. Albers	Name:	Douglas Liu
Title:	President and Chief Executive Officer	Title:	Senior VP Global Operations QIAGEN
Date:	August 22, 2016	Date:	August 22, 2016

[Signature Page to Master Collaboration Agreement]

Exhibit A

Business Continuity

(attached)

Statement on Business Continuity

[***]

Appendix 1-A

Project Schedule #1

(attached)

Project Schedule #1

Between Blueprint Medicines Corporation
38 Sidney Street, Suite 200
Cambridge, MA 02139
hereinafter "**Blueprint**"

and QIAGEN Manchester Limited
Skelton House, Lloyd Street North
Manchester, M15 6SH,
England
hereinafter **"QIAGEN"**

This Project Schedule #1 (this "**Schedule**") is dated August 22, 2016, and is incorporated into the Master Collaboration Agreement, dated August 22, 2016, by and between Blueprint and QIAGEN (for the purposes of this Schedule, the "**MCA**"), and describes a Project to be conducted under the terms of the MCA, including, without limitation, a list of Activities, the development timelines for BLU-285 (the "**Blueprint Product**") and the QIAGEN IVD (as defined below), Deliverables, Markets and other terms applicable to a Development Project. All capitalized terms used and not expressly defined in this Schedule will have the meanings given to them in the MCA.

This Schedule is divided into the following 16 sections:

1. Scope
2. Background
3. Effective Date
4. Term
5. Territory
6. Responsibilities
7. Assumptions
8. Regulatory
9. Study Estimates
10. Clinical Samples
11. Estimated Timeline
12. Milestones & Deliverables
13. Payments
14. Pass-Through Costs
15. Third Party Intellectual Property

16. Appendix A

1. SCOPE. The scope of this Schedule is separated into two components

Part A: Investigational Use Only ("IUO") Assay Development

QIAGEN will develop a real-time polymerase chain reaction ("**PCR**") assay for detection of the PDGFRα D842V somatic mutations in gastrointestinal stromal tumors ("**GIST**"). The primary sample type will be FFPE tissue samples. In order to provide a manufactured IUO assay for use in Blueprint's Phase 1 expansion clinical trial for the Blueprint Product (the "**Phase 1 trial**"), the following steps will need to be carried out by QIAGEN's product development team:

[***]

QIAGEN will support any regulatory interactions ahead of the Phase 1 trial and prepare any diagnostic specific submissions to the Center for Devices and Radiological Health ("**CDRH**") including pre-submissions and an Investigation Device Exemption ("**IDE**") application if one is required.

QIAGEN will set up clinical testing sites to carry out compliant PDGFRα D842V testing ahead of patient enrolment. This will involve, but is not limited to, installation of platforms[1], training of operators and performance qualification of the chosen labs.

QIAGEN will carry out test site initiation visits at clinical testing site and subsequent monitoring of PDGFRα D842V testing during the course of the trial.

Part B: Companion Diagnostic ("CDx") development and validation

The second stage of development will cover all of the activities needed for the development and approval of a CDx assay in the USA, Canada and EU. This stage will include all Design Verification and Clinical Validation Studies.

2. Background

The MCA establishes a legal framework for the Parties' collaborations in the field of development and commercialization of in vitro diagnostics and/or companion diagnostics for Blueprint Products.

Blueprint wishes to have QIAGEN develop and commercialize a companion diagnostic test to identify GIST patients carrying the PDGFRα D842V mutation for treatment with the Blueprint Product (for purposes of this Schedule, the "**QIAGEN IVD**").

3. Effective Date

The effective date of this Schedule shall be August 22, 2016 (the "**Effective Date**").

[1] The cost of [***], which QIAGEN estimates to be approximately [***], will be the responsibility of Blueprint or the Clinical Testing Site.

4. Term

The term of this Schedule shall be from the Effective Date until five (5) years after Regulatory Approval for the Blueprint Product.

5. Territory

The potential territory for this Schedule shall include the countries listed on Appendix A to this Schedule.

6. Responsibilities

Blueprint:

In relation to the development of the QIAGEN IVD, Blueprint shall be responsible for the following;

- Blueprint shall solely be responsible for the clinical testing of the Blueprint Product by the central laboratories.

- Blueprint shall provide QIAGEN clinical data, including sample and patient demographic data, regarding the use of the QIAGEN IVD as well as patient outcome data to the extent such data is available and necessary, as reasonably determined by QIAGEN, for QIAGEN regulatory filings for the QIAGEN IVD and for planning of further QIAGEN IVD development activities at QIAGEN in the performance of the Development Project. Blueprint will be responsible for contracting out the clinical sample testing to a suitable GCP-compliant central laboratory clinical testing site ("Laboratory Site") and QIAGEN will support the selection, training, monitoring and qualification of this vendor. For clarification, notwithstanding any provision in the MCA, the parties expressly agree that Blueprint shall be responsible for the Milestone Payments set forth below and costs set forth in Appendices A which relate to applications for Regulatory Approval of the QIAGEN IVD.

- Blueprint will make reasonable efforts to provide any clinical samples necessary for QIAGEN IVD development and verification/validation. As an alternative or to facilitate the process QIAGEN will work with its approved procurement service providers to source appropriate samples. Sample costs will be passed through to Blueprint

QIAGEN:

Subject to and without limiting the terms and conditions of the MCA, QIAGEN shall use Commercially Reasonable Efforts to perform all activities under this Project and shall be responsible for the development of the QIAGEN IVD as follows.

- QIAGEN shall lead the development and Premarket Approval ("**PMA**") submission with FDA's CDRH for the QIAGEN IVD. QIAGEN shall inform and coordinate with Blueprint on all CDRH-related matters and support Blueprint in discussions with FDA's Center for Drug Evaluation and Research ("**CDER**") for the Blueprint Product.

- Subject to the involvement of Blueprint as described above, QIAGEN shall be responsible for the design, development and regulatory approval of the QIAGEN IVD in accordance with this Schedule, including the development of suitable and necessary protocols for the QIAGEN IVD.

- QIAGEN shall be responsible for manufacturing, supply and delivery of the QIAGEN IVD, including all components for the QIAGEN IVD, subject to any intellectual property considerations set forth in Section 15 below.

- QIAGEN shall be responsible for the preparation of the PMA documentation and site readiness required for submission of the PMA for the QIAGEN IVD.

- QIAGEN shall be responsible for the intended use and applicable package insert, and the pricing, reimbursement and market access of the QIAGEN Kit, subject to the applicable terms of the MCA.

7. Assumptions

Blueprint and QIAGEN each recognize that this Schedule has been prepared on the basis of a number of assumptions. During the course of the Development Project, a change in an assumption upon which this Schedule is based may require a change to modify the scope of the Development Project, and the Parties agree to address such changes in good faith pursuant to the process provided under Section 3.2 of the MCA.

8. Regulatory

An IDE may be required by FDA. This shall be dependent on FDA's response to the Risk Determination Document.

9. Study Estimates

Blueprint estimates screening [***] patients to enroll [***] PDGFRα D842V positive patients into the Phase 1 clinical trial. Patient enrollment is expected to begin [***] using historic patient data/records identifying PDGFRα D842V Mutation positive patients. Patient screening and selection using the QIAGEN IVD is planned to begin [***] when the IUO assay is ready and compliant for use as a prospective screening and selection method.

10. Clinical Samples

QIAGEN will make Commercially Reasonable Efforts to procure representative samples for development and analytical validation of the assay. [***]

[***]

The development of any specialized sample material e.g. cell lines containing the D842V mutation are not included in this project plan and costing. The development of specialized sample material would be considered as pass-through costs to Blueprint. These pass-through costs are outlined as estimated in Section 14 of this Schedule.

Samples from all patients enrolled into the Phase 1 trial need to be retained for the purposes of any bridging studies.

11. [***]

12. Milestones & Deliverables

For clarity, with respect to any Milestone set forth in this Schedule that requires or involves a report, notification or other tangible or written documentation, evidence of Milestone achievement shall include the delivery of such report, notification or other tangible or written documentation.

Part A: IUO Assay Development

Milestone 1:

Generation of a study risk determination request for the PDGFRα D842V assay.

[***]

Milestone 1a:

Generation of pre-submission to determine the strategy for the transition of local PDGFRα testing to centralized testing using the QIAGEN IUO assay and requirements for bridging studies between the patients enrolled on the basis of local testing of the QIAGEN IUO assay

[***]

Milestone 2:

Design Control Planning; Establishment of Design Control documents for IUO assay.

[***]

Milestone 3:

IUO Assay Build: Completion of Assay Design and Feasibility testing of PDGFRα D842V assay

[***]

Milestone 4:

IUO QC Release Method and Controls Concept Available

[***]

Milestone 5:

Design Transfer to Manufacturing Pilot Plant & Manufacturing

[***]

Milestone 6:

Assay Parameters & Performance studies complete for PDGFRA D842V IUO assay

[***]

Milestone 7:

Formal Design Review of Assay: Prior to clinical testing, QIAGEN will carry out the necessary Design Review

[***]

Milestone 8:[2]

IDE Application & approval (if required, based on CDRH feedback associated with Milestone 1)

[***]

Milestone 9:

Manufacture and supply of PDGFRα D842V assay and generation of test site protocol for clinical testing.

[***]

Milestone 10:

Establishment of clinical test site for FPFV studies

[***]

Part B: CDx development and validation

Milestone 11:

Design Control Planning (CDx)

[***]

Milestone 12:

Completion of Design Inputs; Design Input Lock and Design & Development Plan (CDx)

[***]

Milestone 13:

Completion of Assay Optimization and Specification Setting for PDGFRα CDx

[2] This milestone is dependent on [***].

[***]

Milestone 14:

Manufacturing Transfer and Prototype Batch Production (CDx) required for assay performance studies

[***]

Milestone 15:

CDx Assay Performance Studies Complete

[***]

Milestone 16:

Completion of Verification Batches (Pilot Batches)

[***]

Milestone 17:

System Design Lock

[***]

Milestone 18:

Design Output and Design Verification Lock (Completion of Verification)

[***]

Milestone 19:

Assay Software Available

[***]

Milestone 20:

Completion of Lab Set-up Bridging Study

[***]

Milestone 21

Completion of Lab Set-up for Reproducibility Studies (x2 Labs)

[***]

Milestone 22

Completion of Clinical Accuracy Study

[***]

Milestone 23:

Design Validation Lock

[***]

Milestone 24:

PMA Submissions

[***]

Milestone 25:

CE Marking

[***]

Milestone 26:

PMA Approval

[***]

Milestone 27:

Product Implementation

[***]

13. Payment

The Milestones and Deliverables set forth in this Schedule shall be completed by QIAGEN to the satisfaction of Blueprint in accordance with the terms of Section 6 of the MCA. Payment for completed Milestones will be made in accordance with Section 6 of the MCA; provided that any pass-through costs incurred in connection with completing the Milestones and Deliverables that exceed, or are expected to exceed, the amounts agreed to by the Parties and estimated in Section 14 of this Schedule shall be subject to approval of the Joint Project Team.

IUO Assay Milestone Schedule

Milestone	Description	Estimated Completion Date	Milestone Amount ($US)
1	Generation of a study risk determination request for the PDGFRα D842V assay. [***]	[***]	[***]
1a	Generation of pre-submission to determine the strategy for the transition of local PDGFRα testing to centralized testing using the QIAGEN IUO assay and requirements for bridging studies between the patients enrolled on the basis of local testing of the QIAGEN IUO assay. [***]	[***]	[***]
2	Design Control Planning; Establishment of Design Control documents for IUO assay. [***]	[***]	[***]
3	IUO Assay Build: Completion of Assay Design and Feasibility testing of PDGFRα D842V assay [***]	[***]	[***]
4	IUO QC Release Method and Controls Concept Available [***]	[***]	[***]
5	Design Transfer to Manufacturing Pilot Plant & Manufacturing [***]	[***]	[***]
6	Assay Parameters & Performance studies complete for PDGFRα D842V IUO assay [***]	[***]	[***]
7	Formal Design Review of Assay: Prior to clinical testing, QIAGEN will carry out the necessary Design Review [***]	[***]	[***]
8	IDE Application & approval (if required, based on CDRH feedback associated with Milestone 1) [***]	[***]	[***]
9	Manufacture and supply of PDGFRα D842V assay and generation of test site protocol for clinical testing. [***]	[***]	[***]

Milestone	Description	Estimated Completion Date	Milestone Amount ($US)
10	Establishment of clinical test site for FPFV studies [***]	[***]	[***][3]
Total IUO Assay Milestones			**[***]**

CDx Development and Validation Milestone Schedule

Milestone	Description	Estimated Completion Date	Milestone Amount ($US)
11	Design Control Planning (CDx)	[***]	[***]
12	Completion of Design Inputs; Design Input Lock and Design & Development Plan (CDx)	[***]	[***]
13	Completion of Assay Optimization and Specification Setting for PDGFRα CDx	[***]	[***]
14	Manufacturing Transfer and Prototype Batch Production (CDx) required for assay performance studies	[***]	[***]
15	CDx Assay Performance Studies Complete	[***]	[***]
16	Completion of Verification Batches (Pilot Batches)	[***]	[***]
17	System Design Lock	[***]	[***]
18	Design Output and Design Verification Lock (Completion of Verification)	[***]	[***]
19	Assay Software Available	[***]	[***]
20	Completion of Lab Set-up Bridging Study	[***]	[***]
21	Completion of Lab Set-up for Reproducibility Studies [***]	[***]	[***]
22	Completion of Clinical Accuracy Study	[***]	[***][4]
23	Design Validation Lock	[***]	[***]
24	PMA Submissions [***]	[***]	[***]
25	Generation, submission and approval of technical file to a notified body for review and approval of a CE Marked Assay	[***]	[***]
26	PMA Approval	[***]	[***]

[3] The Parties currently estimate [***] for FPFV studies and agree that this Milestone will be dependent [***].
[4] QIAGEN's estimate for the Clinical Accuracy Study is [***] based on [***]. The Parties agree that the Clinical Accuracy Study will be dependent on [***].

27	Transfer to Commercial Manufacturing and Production Implementation US & EU	[***]	[***]
Total CDx Development and Validation Milestones			**[***] [3,4]**

Total Milestones – IUO Assay Milestones and CDx Development and Validation Milestones: **$ 6,082,0003,4**

Total Estimated Program Budget
(Including Total Pass-Through Cost Estimate of Approximately $[***]): **$[***] [3,4]**

14. Pass-Through Cost Estimates

Pass-Through Cost Estimate for IUO Assay Development

Name	Description	Estimated Cost (US$)
GMP Raw materials	Primers & Probes for the development and manufacture of PDGFRα tests. Estimate includes HPLC and Mass determination for each oligonucleotide	[***]
Positive control oligonucleotides	Long oligonucleotides for the generation of positive controls	[***]
Sample Costs	Procurement of sample will be required to support development. The cost of sample procurement varies depending on the disease tissue of interest.	[***]
therascreen Assay	The cost of one test is approximately [***], and the Parties currently estimate testing approximately [***] patients.	[***]
Cell Line Control Materials	FFPE Cell lines may be used as a model for Clinical materials. This will require cell line embedded in paraffin. The manufacture of the cell line blocks will be carried out by a third party specialist standards and controls supplier.	[***]
Clinical Test Site Monitoring	During the course of the Phase 1 trial, monitoring of sites carrying out clinical testing will be conducted. The number of visits will be dependent on recruitment rate and site performance. The estimated cost per visit is approximately [***] per visit, and the Parties currently estimate approximately [***] visits. For clarity, the estimated cost per visit includes any travel and accommodation costs incurred during each such visit.	[***]

Name	Description	Estimated Cost (US$)
Travel & Accommodation	During the course of the program face-to-face Joint Project Team and Joint Steering Committee meetings will take place. The frequency of these meetings will be mutually agreed between QIAGEN and Blueprint in accordance with the MCA.	[***]
IP	Analyze third party rights for freedom-to-operate of the assay. Does not include licensing fees.	[***]
Total Estimated Pass-Through Costs for IUO Assay Development		**[***]**

Pass-Through Cost Estimate for CDx Development and Validation

Name	Description	Estimated Cos (US$)
GMP Raw materials	Primers & Probes for the development and manufacture of PDGFRα tests. Estimate includes HPLC and Mass determination for each oligonucleotide	[***]
Positive control oligonucleotides	Long oligonucleotides for the generation of positive controls	[***]
Sample Costs	Procurement of sample will be required to support development. The cost of sample procurement varies depending on the disease tissue of interest.	[***]
Engineering of Cell Lines	In the absence of clinical samples, it may be necessary to engineer cell line that to act as a surrogate. Cell line engineering would be carried out by a third party supplier.	[***]
Cell Line Control Materials	FFPE Cell lines may be used as a model for Clinical materials. This will require cell line embedded in paraffin. The manufacture of the cell line blocks will be carried out by a third party specialist standards and controls supplier.	[***]
Clinical Test Site Monitoring	During the course of the Phase 1 trial, monitoring of sites carrying out clinical testing will be conducted. The number of visits will be dependent on recruitment rate and site performance. The estimated cost per visit is approximately [***] per visit, and the Parties currently estimate approximately [***] visits. For clarity, the estimated cost per visit includes any travel and accommodation costs incurred during each such visit.	[***]

Name	Description	Estimated Cost (US$)
Travel & Accommodation	During the course of the program face-to-face Joint Project Team and Joint Steering Committee meetings will take place. The frequency of these meetings will be mutually agreed between QIAGEN and Blueprint in accordance with the MCA.	[***]
Canada Registration	Product implementation together with IVD registration activities and submission fees for Health Canada (Assumes no additional data generation)	[***]
IP	Analyze third party rights for freedom-to-operate of the assay. Does not include licensing fees. – covered under IUO development	[***]
Total Estimated Pass-Through Costs for CDx Development and Validation		**[***]**

Total Estimated Pass-Through Costs for IUO Assay Development and CDx Development and Validation: $[***]

15. Third Party Intellectual Property

Licensed IP for PCR technology, not Controlled by QIAGEN:

[***]

QIAGEN hereby represents and warrants to Blueprint that QIAGEN has no right to grant sublicenses to any third party Intellectual Property listed in this Section 15, and to the best of QIAGEN's knowledge, no other Intellectual Property Controlled by a third party will be used by QIAGEN during the performance of activities under this Project.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, QIAGEN and Blueprint, intending to be legally bound, have executed this Agreement at the dates indicated below by their respective duly authorized representatives.

Blueprint Medicines Corporation		**QIAGEN Manchester Limited**	
By:	/s/ Jeffrey W. Albers	By:	/s/ Douglas Liu
Name:	Jeffrey W. Albers	Name:	Douglas Liu
Title:	President and Chief Executive Officer	Title:	Senior VP Global Operations QIAGEN
Date:	August 22, 2016	Date:	August 22, 2016

Appendix A
Territories

1. USA – PMA

2. Canada

3. Europe – CE-IVD (including France, Germany, Italy, Spain and the United Kingdom)

4. While Japan is not included within the scope of this Project due to an evolving regulatory landscape in this country, at Blueprint's request, the Parties shall negotiate diligently and in good faith the terms [***] under which the scope of this Project would be expanded to include potential Commercialization of the QIAGEN IVD together with the Blueprint Product in Japan in accordance with the terms of the MCA.

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is dated as of September 6, 2016 (the "Effective Date"), between Blueprint Medicines Corporation, a Delaware corporation (the "Company"), and Tracey McCain (the "Executive").

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Employment.

(a) Term. The term of this Agreement shall commence on the Effective Date and continue until terminated in accordance with the provisions of Section 3 (the "Term").

(b) Position and Duties. During the Term, the Executive shall serve as the Executive Vice President & Chief Legal Officer of the Company, and shall have such duties as are consistent with such position. The Executive shall report to the Chief Executive Officer of the Company (the "CEO"). The Executive shall devote her full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors, with the approval of the Board of Directors of the Company (the "Board"), or engage in religious, charitable or other activities as long as such services and activities are approved by the Board and do not materially interfere with the Executive's performance of her duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. During the Term, the Executive's annual base salary shall be $405,000. The Executive's base salary shall be re-determined annually by the Board or the Compensation Committee of the Board and shall be subject to increase but not decrease while Executive is serving in the Executive Vice President & Chief Legal Officer role. The annual base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in a manner that is consistent with the Company's usual payroll practices for senior executives.

(b) Sign On Bonus. Executive shall receive a one-time sign on bonus of $100,000 (the "Sign On Bonus"). This payment shall be subject to legally required tax withholdings. Executive agrees that if she terminates her employment within 12 months of the Effective Date, for any reason, and regardless of whether Executive has Good Reason (as defined in this Agreement) to terminate her employment, Executive shall repay the entire Sign On Bonus in accordance with the Company's policies then in effect concerning such bonuses.

(c) Equity. In connection with the commencement of the Executive's employment, Executive shall be granted an option to purchase 100,000 shares of the Company's common stock (the "Option"). The date of the grant and the exercise price shall be determined

by using the closing price on the first business day of the month after the Effective Date. The Option award shall be subject to the terms and conditions of the Company's then-current stock option plan and form of stock option agreement. The Option shall vest as follows: 25% of the shares shall vest and become exercisable on the first anniversary of the Effective Date; thereafter, the remaining 75% of the shares shall vest and become exercisable in 36 equal monthly installments following the first anniversary of the Effective Date. Vesting shall be contingent upon Executive's continued full-time employment with the Company.

(d) Incentive Compensation. During the Term, the Executive shall be eligible to receive cash incentive compensation as determined by the Board or the Compensation Committee of the Board from time to time. Executive's target annual incentive compensation shall be 35% of her Base Salary (the "Target Incentive Compensation"). The Board shall weigh its bonus determination as follows: 75% on Company performance and 25% on Executive's individual performance. To earn incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid. For the year 2016, Executive shall be eligible to receive a pro-rated bonus based upon the period of time Executive is employed at the Company during the 2016 calendar year.

(e) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by her during the Term in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(f) Other Benefits. During the Term, the Executive shall be eligible to participate in or receive benefits under the Company's employee benefit plans in effect from time to time, subject to the terms of such plans.

(g) Vacations. During the Term, the Executive shall be entitled to accrue paid vacation in accordance with the Company's applicable policy.

3. Termination. During the Term, the Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall terminate upon her death.

(b) Disability. The Company may terminate the Executive's employment if she is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then-existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive

shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §260 l *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of her duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of any felony or a misdemeanor involving moral turpitude, deceit, dishonesty or fraud, or any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if she were retained in her position; (iii) continued non-performance by the Executive of her duties hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than 30 days following written notice of such non-performance from the CEO; (iv) a material breach by the Executive of any of the provisions contained in Section 7 of this Agreement; (v) a material violation by the Executive of the Company's written employment policies; or (vi) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation.

(d) Termination by the Company Without Cause. The Company may terminate the Executive's employment at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination by the Company without Cause.

(e) Termination by the Executive. The Executive may terminate her employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events without the Executive's express written consent: (i) a material diminution in the Executive's responsibilities, authority or duties without the Executive's consent; (ii) a material diminution in the Executive's Base Salary and/or Target Incentive Compensation without the Executive's consent (unless such diminution is in connection with a proportional reduction in compensation to all or substantially all of the Company's employees); (iii) a material change of more than 50 miles in the geographic location at which the Executive provides services to the Company; or (iv) the material breach of this Agreement by the Company. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good

Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period ") to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates her employment within 60 days after the end of the Cure Period . If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by her death, the date of her death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b) or by the Company for Cause under Section 3(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 3(d), the date on which a Notice of Termination is given; (iv) if the Executive 's employment is terminated by the Executive under Section 3(e) without Good Reason, 30 days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 3(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement.

4. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason, the Company shall pay or provide to the Executive (or to her authorized representative or estate) (i) any Base Salary earned through the Date of Termination, unpaid expense reimbursements (subject to, and in accordance with, Section 2(e) of this Agreement) and unused vacation that accrued through the Date of Termination on or before the time required by law but in no event more than 30 days after the Executive's Date of Termination; and (ii) any vested benefits the Executive may have under any employee benefit plan of the Company through the Date of Termination, which vested benefits shall be paid and/or provided in accordance with the terms of such employee benefit plans (collectively, the "Accrued Benefit").

(b) Termination by the Company Without Cause or by the Executive with Good Reason. During the Term, if the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates her employment for Good Reason as provided in Section 3(e), then the Company shall pay the Executive her Accrued Benefit. In addition, subject to the Executive signing a separation agreement containing, among

other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property and non-disparagement, in a form and manner satisfactory to the Company (the "Separation Agreement and Release") and the Separation Agreement and Release becoming irrevocable, all within 60 days after the Date of Termination:

(i) the Company shall pay the Executive an amount equal to one (1) times the Executive's Base Salary (the "Severance Amount "); and

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for twelve (12) months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company.

The amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over twelve (12) months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section l .409A-2(b)(2).

The receipt of any severance payments or benefits pursuant to Section 4 will be subject to Executive not violating the Restrictive Covenant Agreement (as defined below), the terms of which are hereby incorporated by reference. In the event Executive breaches the Restrictive Covenant Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments and benefits to which Executive may otherwise be entitled pursuant to Section 4 without affecting the Executive's release or Executive's obligations under the Separation Agreement and Release

5. Sale Event Payment. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to her assigned duties and her objectivity during the pendency and after the occurrence of any Sale Event (as defined below). These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if the Date of Termination occurs within twelve (12) months after the occurrence of the first event constituting a Sale Event. These provisions shall terminate and be of no further force or effect beginning twelve (12) months after the occurrence of a Sale Event.

(a) Sale Event. During the Term, if within twelve (12) months after a Sale Event, the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates her employment for Good Reason as provided in Section 3(e), then, subject to the signing of the Separation Agreement and Release by the

Executive and the Separation Agreement and Release becoming irrevocable, all within 60 days after the Date of Termination,

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to the sum of (A) one (1) times the Executive's current Base Salary (or the Executive's Base Salary in effect immediately prior to the Sale Event, if higher) plus (B) one (1) times the Executive's Target Incentive Compensation; and

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for twelve (12) months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iii) all time-based stock options and other time-based stock-based awards held by the Executive shall accelerate and become fully exercisable or nonforfeitable as of the Date of Termination; provided that, if any stock options or other stock-based awards held by the Executive prior to the Effective Date have accelerated vesting terms that are more favorable to the Executive than those set forth in this Section 5(a)(iii), the vesting terms of those stock options or other stock-based awards shall apply as opposed to the accelerated vesting terms set forth in this Section 5(a)(iii) solely with respect to such awards.

The amounts payable under Section 5(a)(i) and (ii) shall be paid or commence to be paid within 60 days after the Date of Termination; provided however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such payment shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 2800 of the Internal Revenue Code of 1986, as amended (the "Code") and the applicable regulations thereunder (the "Aggregate Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, then the Aggregate Payments shall be reduced (but not below zero) so that the sum of all of the Aggregate Payments shall be $1.00 less than the amount at which the Executive becomes subject to the excise tax imposed by Section 4999 of the Code; provided that such reduction shall only occur i f it would result in the Executive receiving a higher After Tax Amount (as defined below) than the Executive would receive if the Aggregate Payments were not subject to such reduction. In such event, the Aggregate Payments shall be reduced in the following order, in each case, in reverse chronological order beginning with the Aggregate Payments that are to be paid the furthest in time from consummation of the transaction that is subject to

Section 2800 of the Code: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity based payments and acceleration; and (4) non-cash forms of benefits; provided that in the case of all the foregoing Aggregate Payments all amounts or payments that are not subject to calculation under Treas. Reg. §1.2800-1, Q&A-24(b) or (c) shall be reduced before any amounts that are subject to calculation under Treas. Reg. §1.2800-1, Q&A- 24(b) or (c).

(ii) For purposes of this Section S(b), the "After Tax Amount" means the amount of the Aggregate Payments less all federal, state, and local income, excise and employment taxes imposed on the Executive as a result of the Executive's receipt of the Aggregate Payments. For purposes of determining the After Tax Amount, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in each applicable state and locality, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes.

(iii) The determination as to whether a reduction in the Aggregate Payments shall be made pursuant to Section 5(b)(i) shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Sale Event Definition. For purposes of this Section 5, "*Sale Event*" shall mean (i) the sale of all or substantially all of the assets of the Company on a consolidated basis to an unrelated person or entity, (ii) a merger, reorganization or consolidation pursuant to which the holders of the Company's outstanding voting power and outstanding stock immediately prior to such transaction do not own a majority of the outstanding voting power and outstanding stock or other equity interests of the resulting or successor entity (or its ultimate parent, if applicable) immediately upon completion of such transaction, (iii) the sale of all of the Stock of the Company to an unrelated person, entity or group thereof acting in concert, or (iv) any other transaction in which the owners of the Company's outstanding voting power immediately prior to such transaction do not own at least a majority of the outstanding voting power of the Company or any successor entity immediately upon completion of the transaction other than as a result of the acquisition of securities directly from the Company.

Notwithstanding the foregoing, a "Sale Event" shall not be deemed to have occurred for purposes of the foregoing clauses (ii) and (iv) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of voting securities outstanding, increases the proportionate number of voting securities beneficially owned by any person to 50 percent or more of the combined voting power of all of the then outstanding voting securities; provided , however , that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of voting securities (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns 50 percent or more of the combined

voting power of all of the then outstanding voting securities, then a “Sale Event” shall be deemed to have occurred for purposes of the foregoing clauses (i i) and (iv).

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding , if at the time of the Executive’s separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a “specified employee” within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive’s separation from service would be considered deferred compensation otherwise subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive’s separation from service, or (B) the Executive’s death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year (except for any lifetime or other aggregate limitation applicable to medical expenses). Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes “non-qualified deferred compensation” under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive’s termination of employment , then such payment s or benefit s shall be payable only upon the Executive ‘s “separation from service.” The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A- l(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payment s hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section J.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A

of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Restrictive Covenants. The Executive agrees to the terms of the Non-Solicitation, Confidentiality and Assignment Agreement, dated as of the Effective Date, by and between the Company and the Executive (the "Restrictive Covenant Agreement"), the terms of which are hereby incorporated by reference as material terms of this Agreement.

8. Arbitration of Disputes. Any controversy or claim arising out of or relating to this Agreement or the breach thereof or otherwise arising out of the Executive's employment or the termination of that employment (including, without limitation, any claims of unlawful employment discrimination whether based on age or otherwise) shall, to the fullest extent permitted by law, be settled by arbitration in any forum and form agreed upon by the parties or, in the absence of such an agreement, under the auspices of the American Arbitration Association ("AAA") in Boston, Massachusetts in accordance with the Employment Dispute Resolution Rules of the AAA, including, but not limited to, the rules and procedures applicable to the selection of arbitrators. In the event that any person or entity other than the Executive or the Company may be a party with regard to any such controversy or claim, such controversy or claim shall be submitted to arbitration subject to such other person or entity's agreement. Judgment upon the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. This Section 8 shall be specifically enforceable. Notwithstanding the foregoing, this Section 8 shall not preclude either party from pursuing a court action for the sole purpose of obtaining a temporary restraining order or a preliminary injunction in circumstances in which such relief is appropriate; provided that any other relief shall be pursued through an arbitration proceeding pursuant to this Section 8.

9. Consent to Jurisdiction. To the extent that any court action is permitted consistent with or to enforce Section 8 of this Agreement, the parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

10. Integration. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all other prior agreements between the parties concerning such subject matter; provided that the Restrictive Covenant Agreement is expressly preserved and incorporated by reference herein.

11. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

12. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after her termination of employment but prior to the completion by the Company of all payments due her under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to her death (or to her estate, if the Executive fails to make such designation).

13. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which i t is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

14. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

15. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

16. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail , postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

17. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

18. Governing Law. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

19. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

20. Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to

the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a material breach of this Agreement.

[*Signature page follows*]

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first above written.

BLUEPRINT MEDICINES CORPORATION

By: /s/ Jeffrey Albers
Name: Jeffrey Albers
Title: President and Chief Executive Officer

EXECUTIVE

/s/ Tracey L. McCain
Name: Tracey L. McCain

Exhibit 31.1

CERTIFICATIONS

I, Jeffrey W. Albers, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Blueprint Medicines Corporation;

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

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

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

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

(b) (Paragraph omitted pursuant to SEC Release Nos. 33-8238/34-47986 and 33-8392/34-49313);

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

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

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

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

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

Date: November 10, 2016

By: /s/ Jeffrey W. Albers
Jeffrey W. Albers
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Michael Landsittel, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Blueprint Medicines Corporation;

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

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

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

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

(b) (Paragraph omitted pursuant to SEC Release Nos. 33-8238/34-47986 and 33-8392/34-49313);

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

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

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

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

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

Date: November 10, 2016

By: /s/ Michael Landsittel
Michael Landsittel
Vice President of Finance
(Principal Financial and Accounting Officer)

Exhibit 32.1

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

In connection with the Quarterly Report on Form 10-Q of Blueprint Medicines Corporation (the "Company") for the period ended September 30, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his knowledge:

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

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

Date: November 10, 2016

By: /s/ Jeffrey W. Albers
Jeffrey W. Albers
President and Chief Executive Officer
(Principal Executive Officer)

Date: November 10, 2016

By: /s/ Michael Landsittel
Michael Landsittel
Vice President of Finance
(Principal Financial and Accounting Officer)