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

FORM 10-Q

(Mark One)

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

For the quarterly period ended March 31, 2017

OR

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

For the transition period from _____ to _____

Commission file number: 001-35409

Merrimack Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**04-3210530**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
One Kendall Square, Suite B7201 Cambridge, MA	**02139**
(Address of principal executive offices)	**(Zip Code)**

(617) 441-1000
(Registrant's telephone number, including area code)

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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐
Emerging growth company	☐		

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

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

As of May 9, 2017, there were 132,427,921 shares of Common Stock, $0.01 par value per share, outstanding.

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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, including statements regarding our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this Quarterly Report on Form 10-Q include, among other things, statements about:

- our plans to develop and commercialize our clinical stage product candidates and diagnostics;
- our ongoing and planned discovery programs, preclinical studies and clinical trials;
- the timing of the completion of our clinical trials and the availability of results from such trials;
- our ability to establish and maintain collaborations for our product candidates;
- our receipt of payments related to the milestone events under the asset purchase and sale agreement, or the asset sale agreement, with Ipsen S.A, or Ipsen, or under the license and collaboration agreement between Baxalta Incorporated, Baxalta US Inc. and Baxalta GmbH, collectively Baxalta, and Ipsen, when expected or at all;
- the timing of and our ability to obtain and maintain regulatory approvals for our product candidates;
- the rate and degree of market acceptance and clinical utility of our products;
- our intellectual property position;
- our commercialization, marketing and manufacturing capabilities and strategy;
- the potential advantages of our systems biology approach to drug research and development;
- the potential use of our systems biology approach in fields other than oncology;
- the outcome of litigation against us; and
- our estimates regarding expenses, future revenues, capital requirements and needs for additional financing.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Quarterly Report on Form 10-Q, particularly in Part II, Item 1A. Risk Factors, that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, collaborations or investments that we may make.

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 may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

NOTE REGARDING TRADEMARKS

ONIVYDE® is a trademark of Ipsen. Any other trademarks, trade names and service marks referred to in this Quarterly Report on Form 10-Q are the property of their respective owners.

PART I

FINANCIAL INFORMATION

Item 1. Financial Statements.

Merrimack Pharmaceuticals, Inc.
Condensed Consolidated Balance Sheets
(unaudited)

(in thousands, except per share amounts)	March 31, 2017	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 17,155	$ 21,524
Restricted cash	102	102
Accounts receivable, net	43	275
Prepaid expenses and other current assets	2,338	2,239
Assets held for sale	26,634	33,295
Total current assets	46,272	57,435
Restricted cash	674	674
Property and equipment, net	12,852	14,212
Other assets	27	27
Assets held for sale, net of current portion	8,814	9,135
Total assets	$ 68,639	$ 81,483
Liabilities, non-controlling interest and stockholders' deficit		
Current liabilities:		
Accounts payable, accrued expenses and other	$ 38,756	$ 29,369
Deferred rent	2,054	2,014
Liabilities held for sale	67,187	56,839
Total current liabilities	107,997	88,222
Deferred rent, net of current portion	2,868	3,386
Long-term debt	218,041	216,861
Liabilities held for sale, net of current portion	16,877	25,673
Total liabilities	345,783	334,142
Commitments and contingencies		
Non-controlling interest	(1,406)	(1,539)
Stockholders' deficit:		
Preferred stock, $0.01 par value: 10,000 shares authorized at March 31, 2017 and December 31, 2016; no shares issued or outstanding at March 31, 2017 or December 31, 2016	—	—
Common stock, $0.01 par value: 200,000 shares authorized at March 31, 2017 and December 31, 2016; 131,911 and 130,197 shares issued and outstanding at March 31, 2017 and December 31, 2016, respectively	1,319	1,302
Additional paid-in capital	707,428	702,377
Accumulated deficit	(984,485)	(954,799)
Total stockholders' deficit	(275,738)	(251,120)
Total liabilities, non-controlling interest and stockholders' deficit	$ 68,639	$ 81,483

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

Merrimack Pharmaceuticals, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(unaudited)

(in thousands, except per share amounts)	Three Months Ended March 31, 2017	2016
Costs and expenses:		
Research and development expenses	$ 21,605	$ 28,002
General and administrative expenses	5,634	6,452
Total costs and expenses	27,239	34,454
Loss from continuing operations	(27,239)	(34,454)
Other income and expenses:		
Interest income	14	72
Interest expense	(1,979)	(3,290)
Other expense, net	(2)	(43)
Loss from continuing operations	(29,206)	(37,715)
Discontinued operations:		
Loss from discontinued operations, net of tax	(947)	(943)
Net loss	(30,153)	(38,658)
Net loss attributable to non-controlling interest	(467)	(185)
Net loss attributable to Merrimack Pharmaceuticals, Inc.	$ (29,686)	$ (38,473)
Other comprehensive loss:		
Unrealized loss on available-for-sale securities	—	(14)
Other comprehensive loss	—	(14)
Comprehensive loss	$ (29,686)	$ (38,487)
Amounts attributable to Merrimack Pharmaceuticals, Inc.:		
Loss from continuing operations	$ (28,739)	$ (37,530)
Loss from discontinued operations	(947)	(943)
Net loss attributable to Merrimack Pharmaceuticals, Inc.	$ (29,686)	$ (38,473)
Basic and diluted net loss per share:		
Loss from continuing operations	$ (0.22)	$ (0.32)
Loss from discontinued operations	(0.01)	(0.01)
Net loss per share	$ (0.23)	$ (0.33)
Weighted-average common shares used per share calculations—basic and diluted	130,588	116,064

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

Merrimack Pharmaceuticals, Inc.
Condensed Consolidated Statements of Cash Flows
(unaudited)

(in thousands)	Three Months Ended March 31, 2017	2016
Cash flows from operating activities		
Net loss	$ (30,153)	$ (38,658)
Less:		
Loss from discontinued operations	(947)	(943)
Loss from continuing operations	(29,206)	(37,715)
Adjustments to reconcile net loss to net cash used in operating activities		
Non-cash interest expense	1,508	2,190
Depreciation and amortization expense	1,182	1,198
Stock-based compensation expense	796	2,510
Changes in operating assets and liabilities:		
Accounts receivable	232	11
Accounts payable, accrued expenses and other	8,054	(2,231)
Other assets and liabilities, net	(690)	1,324
Net cash used by continuing operations for operating activities	(18,124)	(32,713)
Net cash provided by (used in) discontinuing operations for operating activities	7,968	(20,810)
Net cash used in operating activities	(10,156)	(53,523)
Cash flows from investing activities		
Purchases of marketable securities	—	(84,262)
Purchases of property and equipment	(290)	(1,229)
Net cash used in investing activities	(290)	(85,491)
Cash flows from financing activities		
Proceeds from exercise of options to purchase common stock	4,053	1,645
Proceeds from issuance of preferred stock by Silver Creek Pharmaceuticals, Inc.	2,024	—
Net cash provided by financing activities	6,077	1,645
Net decrease in cash and cash equivalents	(4,369)	(137,369)
Cash and cash equivalents, beginning of period	21,524	185,606
Cash and cash equivalents, end of period	$ 17,155	$ 48,237
Non-cash investing and financing activities		
Purchases of property and equipment in accounts payable, accrued expenses and other	$ 34	$ 388
Receivables related to stock option exercises in prepaid expenses and other current assets	76	53
Supplemental disclosure of cash flows		
Cash paid for interest	$ 1,368	$ 2,813

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

1. Nature of the Business

Merrimack Pharmaceuticals, Inc. (the "Company") is a biopharmaceutical company based in Cambridge, Massachusetts that is outthinking cancer to ensure that patients and their families live fulfilling lives. The Company's mission is to transform cancer care through the smart design and development of targeted solutions based on a deep understanding of cancer pathways and biological markers. All of the Company's product candidates, including three in clinical studies and several others in preclinical development, fit into the Company's strategy of (1) understanding the biological problems the Company is trying to solve, (2) designing specific solutions and (3) developing those solutions for biomarker-selected patients. This three-pronged strategy seeks to ensure optimal patient outcomes.

On April 3, 2017, the Company announced that it commenced operating as a new, refocused research and clinical development company in connection with the completion of its previously announced transaction (the "Asset Sale") with Ipsen S.A. ("Ipsen"). Pursuant to the Asset Purchase and Sale Agreement, dated as of January 7, 2017 (the "Asset Sale Agreement"), between the Company and Ipsen, the Company sold to Ipsen its right, title and interest in the non-cash assets, equipment, inventory, contracts and intellectual property primarily related to or used in the Company's business operations and activities involving or relating to developing, manufacturing and commercializing ONIVYDE, the Company's first commercial product, and MM-436 (the "Commercial Business"). The Company received $575.0 million in cash (subject to a working capital adjustment) upon the closing of the Asset Sale and is eligible to receive up to $450.0 million in additional regulatory approval-based milestone payments. The Company also retained the rights to receive net milestone payments of up to $33.0 million that may become payable pursuant to the license and collaboration agreement with Baxalta Incorporated, Baxalta US Inc. and Baxalta GmbH (collectively, "Baxalta") for the ex-U.S. development and commercialization of ONIVYDE.

The Company's non-commercial assets, including its clinical and preclinical development programs (the "Pipeline Business"), were not included in the Asset Sale and remain assets of the Company. As of the closing of the Asset Sale, the Company's most advanced programs are as follows:

- MM-121 (seribantumab), a fully human monoclonal antibody that binds to the ErbB3 (HER3) receptor and targets heregulin positive cancers. The Company is currently conducting the Phase 2 randomized SHERLOC clinical trial evaluating MM-121 in heregulin positive non-small cell lung cancer patients and plans to initiate another Phase 2 randomized clinical trial in 2017 in heregulin positive, hormone receptor positive, ErbB2 (HER2) negative, metastatic breast cancer patients;
- MM-141 (istiratumab), a fully human bispecific tetravalent monoclonal antibody designed to block tumor survival signals by targeting receptor complexes containing the insulin-like growth factor 1 ("IGF-1") receptor and ErbB3 (HER3) cell surface receptors. The Company is currently conducting the Phase 2 randomized CARRIE clinical trial evaluating MM-141 in previously untreated metastatic pancreatic cancer patients with high levels of free IGF-1 in combination with nab-paclitaxel and gemcitabine; and
- MM-310, an antibody-directed nanotherapeutic ("ADN") that contains a novel prodrug of the highly potent chemotherapy docetaxel and targets the ephrin receptor A2 ("EphA2") receptor, which is highly expressed in most solid tumor types. MM-310 was designed to improve the therapeutic window of docetaxel in major oncology indications, such as prostate, ovarian, bladder, gastric, pancreatic and lung cancers. The Company initiated a Phase 1 clinical trial to evaluate safety and preliminary activity of MM-310 in the first quarter of 2017.

In addition to its clinical-stage programs, the Company has several product candidates in preclinical development and a discovery effort advancing additional candidate medicines.

The Company is subject to risks and uncertainties common to companies in the biopharmaceutical industry, including, among other things, its ability to secure additional capital to fund operations, success of clinical trials, development by competitors of new technological innovations, dependence on collaborative arrangements, protection of proprietary technology, compliance with government regulations and dependence on key personnel. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of capital, adequate personnel, infrastructure and extensive compliance reporting capabilities.

The accompanying condensed consolidated financial statements have been prepared on a basis which assumes that the Company will continue as a going concern and which contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business. Until such time, if ever, as the Company can generate sufficient product revenues, the Company expects to finance its cash needs through a combination of equity offerings, debt financings, collaborations, licensing arrangements and other marketing and distribution arrangements. The Company could also engage in discussions with third parties regarding partnerships, joint ventures, combinations or divestitures of one or more of its businesses as it seeks to further the development of its research programs, improve its cash position and maximize stockholder value.

2. Basis of Presentation and Consolidation

The accompanying condensed consolidated financial statements as of March 31, 2017 and December 31, 2016, and for the three months ended March 31, 2017 and 2016, have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission (the "SEC") and generally accepted accounting principles in the United States of America ("GAAP") for condensed consolidated financial information. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. In the opinion of management, these condensed consolidated financial statements reflect all adjustments which are necessary for a fair statement of the Company's financial position and results of its operations, as of and for the periods presented. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes thereto contained in the Company's Annual Report on Form 10-K for the year ended December 31, 2016 filed with the SEC on March 1, 2017.

The information presented in the condensed consolidated financial statements and related notes as of March 31, 2017, and for the three months ended March 31, 2017 and 2016, is unaudited. The December 31, 2016 condensed consolidated balance sheet included herein was derived from the audited financial statements as of that date, but does not include all disclosures, including notes, required by GAAP for complete financial statements.

Interim results for the three months ended March 31, 2017 are not necessarily indicative of the results that may be expected for the fiscal year ending December 31, 2017, or any future period.

As of March 31, 2017, the Commercial Business met all the conditions to be classified as held-for-sale and represents a discontinued operation since the disposal of the Commercial Business is a strategic shift that will have a major effect on the Company's operations and financial results. The Company will not have further significant involvement in the operations of the discontinued Commercial Business. The operating results of the Commercial Business are reported as a loss from discontinued operations, net of tax in the condensed consolidated statements of operations for all periods presented. In addition, in the condensed consolidated balance sheet as of March 31, 2017 and December 31, 2016, the assets and liabilities held for sale have been presented separately. For additional information, see Note 3, "Sale of Commercial Business."

These condensed consolidated financial statements include the accounts of the Company and Silver Creek Pharmaceuticals, Inc. ("Silver Creek"), representing a variable interest entity that the Company is required to consolidate. All intercompany transactions and balances have been eliminated in consolidation.

As of March 31, 2017, the Company's unrestricted cash and cash equivalents includes $2.8 million of cash and cash equivalents held by Silver Creek. This $2.8 million held by Silver Creek is designated for the operations of Silver Creek.

In the first quarter of 2017, Silver Creek entered into a Series C preferred stock financing, issuing 1.4 million shares of Series C preferred stock at $1.50 per share for proceeds of $2.0 million. In conjunction with this sale in the first quarter of 2017, Silver Creek also issued warrants to purchase 1.8 million shares of Silver Creek Series C preferred stock to investors. As of March 31, 2017, the Company held a 52% ownership interest in Silver Creek and maintained control over the Silver Creek Board of Directors through its voting rights. As such, the Company remains the primary beneficiary of Silver Creek.

The change in the non-controlling interest related to Silver Creek was as follows:

(in thousands)	Non-Controlling Interest
Balance at December 31, 2016	$ (1,539)
Net loss attributable to Silver Creek	(467)
Issuance of Silver Creek Series C preferred stock	600
Balance at March 31, 2017	$ (1,406)

(in thousands)	Non-Controlling Interest
Balance at December 31, 2015	$ 239
Net loss attributable to Silver Creek	(185)
Balance at March 31, 2016	$ 54

3. Sale of Commercial Business

Ipsen

On April 3, 2017, the Company completed the sale of the Commercial Business to Ipsen. Pursuant to the Asset Sale Agreement, the Company may be entitled to up to $450.0 million in additional payments based on the achievement by or on behalf of Ipsen of certain milestone events if the U.S. Food and Drug Administration (the "FDA") approves ONIVYDE for certain indications as follows: (i) $225.0 million upon the regulatory approval by the FDA of ONIVYDE for the first-line treatment of metastatic adenocarcinoma of the pancreas (a) in combination with fluorouracil and leucovorin (with or without oxaliplatin), (b) in combination with gemcitabine and abraxane or (c) following submission and filing of regulatory approval by Ipsen for purposes of commercialization by Ipsen; (ii) $150.0 million upon the regulatory approval by the FDA of ONIVYDE for the treatment of small cell lung cancer after failure of first-line chemotherapy; and (iii) $75.0 million upon the regulatory approval by the FDA of ONIVYDE for an additional indication unrelated to those described above.

In connection with the sale of the Commercial Business, on April 3, 2017, the Company entered into a transition services agreement, a sublease agreement and an intellectual property license agreement with Ipsen, among others, as further described in Note 13, "Subsequent Events." Pursuant to the transition services agreement, the Company and Ipsen are providing certain services to each other for a period of 24 months following the closing, including Ipsen's agreement to manufacture MM-310 and to perform certain quality related services.

Discontinued Operations and Assets Held for Sale

The condensed consolidated financial statements for the three months ended March 31, 2017 and 2016 reflect the operations of the Commercial Business as a discontinued operation. Discontinued operations for the three months ended March 31, 2017 and 2016 includes the following:

(in thousands)	Three Months Ended March 31,	
	2017	2016
Revenues:		
Product revenues, net	$ 16,135	$ 9,968
License and collaboration revenues	7,797	11,313
Other revenues	1,973	—
Total revenues	25,905	21,281
Costs and expenses:		
Cost of revenues	3,890	711
Research and development expenses	3,730	4,880
Selling, general and administrative expenses	8,733	11,343
Restructuring expenses	5,265	—
Total costs and expenses	21,618	16,934
Other income and expenses:		
Interest expense	(5,234)	(5,290)
Loss from discontinued operations	(947)	(943)

The carrying value of the assets and liabilities of the Commercial Business classified as "Assets held for sale" in the condensed consolidated balance sheets are as follows:

(in thousands)	March 31, 2017	December 31, 2016
Assets		
Current assets:		
Accounts receivable, net	$ 8,985	$ 17,194
Inventory	15,532	14,554
Prepaid expenses and other current assets	2,117	1,547
Total current assets held for sale	26,634	33,295
Property and equipment, net	1,376	1,553
Intangible assets, net	3,833	3,977
Goodwill	3,605	3,605
Total long-term assets held for sale	8,814	9,135
Liabilities		
Current liabilities:		
Accounts payable, accrued expenses and other	28,563	20,613
Deferred revenues	38,624	36,226
Total current liabilities held for sale	67,187	56,839
Deferred revenues, net of current portion	16,877	25,673
Total liabilities held for sale	16,877	25,673

Inventory

Inventory of the Commercial Business as of March 31, 2017 and December 31, 2016 consisted of the following:

(in thousands)	March 31, 2017	December 31, 2016
Raw materials	$ 4,246	$ 4,483
Work in process	9,053	8,651
Finished goods	2,233	1,420
Total inventory	$ 15,532	$ 14,554

Restructuring Activities

On January 8, 2017, the Company announced a reduction in headcount by approximately 30% in connection with the Asset Sale and the completion of its strategic pipeline review. Upon the closing of the Asset Sale and the completion of its strategic pipeline review, the Company had approximately 80 employees.

Under this corporate restructuring, for the three months ended March 31, 2017, the Company recognized total restructuring expenses of $5.3 million, which was related to contractual termination benefits for employees with pre-existing severance arrangements. These one-time employee termination benefits are comprised of severance, benefits and related costs, all of which are expected to result in cash expenditures. The Company anticipates that the majority of these payments will be made during the second quarter of 2017. The expense of $5.3 million was included in discontinued operations, as the costs are directly associated with the sale of the Commercial Business.

The following table summarizes the charges related to the restructuring activities as of March 31, 2017:

(in thousands)	Accrued Restructuring Expenses at December 31, 2016	Expenses	Less: Payments	Accrued Restructuring Expenses at March 31, 2017
Severance, benefits and related costs	$ —	$ 5,265	$ —	$ 5,265
Totals	$ —	$ 5,265	$ —	$ 5,265

See Note 13, "Subsequent Events," in the accompanying notes to the condensed consolidated financial statements for additional information.

License and Collaboration Agreements Related to the Asset Sale

Baxalta

On September 23, 2014, the Company and Baxter International Inc., Baxter Healthcare Corporation and Baxter Healthcare SA entered into a license and collaboration agreement (the "Baxalta Agreement") for the development and commercialization of ONIVYDE outside of the United States and Taiwan (the "Licensed Territory"). In connection with Baxter International Inc.'s separation of the Baxalta business, the Baxalta Agreement was assigned to Baxalta during the second quarter of 2015. As part of the Baxalta Agreement, the Company granted Baxalta an exclusive, royalty-bearing right and license under the Company's patent rights and know-how to develop and commercialize ONIVYDE in the Licensed Territory.

On April 3, 2017, the Baxalta Agreement and all related agreements, including the Company's agreement related to the commercial supply of ONIVYDE, were assigned to Ipsen in connection with the Asset Sale. Pursuant to the Asset Sale Agreement, the Company retained the rights to receive net milestone payments of up to $33.0 million that may become payable pursuant to the Baxalta Agreement for the ex-U.S. development and commercialization of ONIVYDE, which is comprised of potential payments of $18.0 million from the sale of ONIVYDE in two additional major European countries, $5.0 million related to the sale of ONIVYDE in the first major non-European, non-Asian country and $10.0 million for the first patient dosed in the planned small cell lung cancer trial.

PharmaEngine, Inc.

On May 5, 2011, the Company and PharmaEngine, Inc. ("PharmaEngine") entered into an assignment, sublicense and collaboration agreement (the "PharmaEngine Agreement") under which the Company reacquired rights in Europe and certain countries in Asia to ONIVYDE. In exchange, the Company agreed to pay PharmaEngine a nonrefundable, noncreditable upfront payment of $10.0 million and up to an additional $80.0 million in aggregate development and regulatory milestones and $130.0 million in aggregate sales milestones.

On April 3, 2017, the PharmaEngine Agreement and all related agreements, including the Company's agreement related to its commercial supply of ONIVYDE, were assigned to Ipsen in connection with the Asset Sale.

4. Going Concern

In accordance with Accounting Standards Codification ("ASC") 205-40, *Going Concern*, the Company has evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern within one year after the date that the condensed consolidated financial statements are issued.

As of December 31, 2016, the Company had $21.5 million in unrestricted cash and cash equivalents, had suffered recurring losses from operations and had negative working capital and cash outflows from operating activities. Based on the evaluation completed in connection with the filing of the Company's Annual Report on Form 10-K for the year ended December 31, 2016, including consideration of management's plans, the Company previously concluded that there was substantial doubt as to its ability to continue as a going concern within one year after March 1, 2017, the date that the consolidated financial statements were issued.

On April 3, 2017, the Company closed the Asset Sale with Ipsen and received a $575.0 million upfront cash payment (subject to a working capital adjustment). The Company used a portion of the cash payment to redeem the $175.0 million outstanding aggregate principal amount of 11.50% senior secured notes due 2022 (the "2022 Notes"), which also required an additional make-whole premium payment of approximately $20.1 million, and deposited $60.0 million into an escrow account in response to a lawsuit filed by the trustee and certain holders of its 4.50% convertible notes due 2020 (the "Convertible Notes"). The escrow and the lawsuit are described in more detail in Note 13, "Subsequent Events." The Company also plans to distribute $140.0 million of the upfront cash payment in the form of a special cash dividend to stockholders. After consideration of the Company's cash and cash equivalents balance at March 31, 2017 of $17.2 million and the net proceeds from the Asset Sale, the Company has concluded that the previous conditions and events that raised substantial doubt about its ability to continue as a going concern have been alleviated.

5. Income Taxes

Deferred tax assets and liabilities are recognized based on temporary differences between the financial reporting and tax basis of assets and liabilities using future enacted tax rates. A valuation allowance is recorded against deferred tax assets if it is more likely than not that some or all of the deferred tax assets will not be realized.

For the three months ended March 31, 2017 and 2016, the Company did not recognize any tax expense or benefit due to its loss position. In the second quarter of 2017, when the sale of the Commercial Business closed, the Company will record a pre-tax gain on the sale of the Commercial Business. The Company expects to use a portion of its net operating losses to offset the taxable gain generated by the sale, which will result in a partial release of the Company's valuation allowance in the second quarter of 2017. As of March 31, 2017, the sale of the Commercial Business had not been finalized, as all of the closing conditions had not been met and substantial uncertainty existed as to if the sale would be finalized. Therefore, as of March 31, 2017, after considering all available evidence, the Company concluded that it should maintain its valuation allowance.

6. Net Loss Per Common Share

Basic net loss per share is calculated by dividing the net loss available to common stockholders by the weighted-average number of common shares outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is computed by dividing the net loss available to common stockholders by the weighted-average number of common share equivalents outstanding for the period determined using the treasury-stock method. For purposes of this calculation, convertible preferred stock, stock options and warrants are considered to be common stock equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive.

As discussed in Note 10, "Borrowings," in July 2013, the Company issued $125.0 million aggregate principal amount of Convertible Notes in an underwritten public offering. Following the repayment and satisfaction in full of the Company's obligations to Hercules Technology Growth Capital, Inc. ("Hercules") under its Loan and Security Agreement with Hercules (the "Loan Agreement"), which occurred in December 2015, upon any conversion of the Convertible Notes, the Convertible Notes may be settled, at the Company's election, in cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock. For purposes of calculating the maximum dilutive impact, it is presumed that the conversion premium will be settled in common stock, inclusive of a contractual make-whole provision resulting from a fundamental change, and the resulting potential common shares included in diluted earnings per share if the effect is more dilutive. As of March 31, 2017, $60.8 million aggregate principal amount of the Convertible Notes remained outstanding.

The stock options and conversion premium on the Convertible Notes are excluded from the calculation of diluted loss per share because the net loss for the three months ended March 31, 2017 and 2016 causes such securities to be anti-dilutive. Outstanding securities excluded from the calculation of diluted loss per share for the three months ended March 31, 2017 and 2016 are shown in the chart below:

	Three Months Ended March 31,	
(in thousands)	**2017**	**2016**
Outstanding options to purchase common stock	16,523	21,647
Conversion of the Convertible Notes	12,158	25,000

7. Fair Value of Financial Instruments

Fair value is an exit price, representing the amount that would be received from the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. Fair value is determined based on observable and unobservable inputs. Observable inputs reflect readily obtainable data from independent sources, while unobservable inputs reflect certain market assumptions. As a basis for considering such assumptions, GAAP establishes a three-tier value hierarchy, which prioritizes the inputs used to develop the assumptions and for measuring fair value as follows: (Level 1) observable inputs such as quoted prices in active markets for identical assets; (Level 2) inputs other than the quoted prices in active markets that are observable either directly or indirectly; and (Level 3) unobservable inputs in which there is little or no market data, which requires the Company to develop its own assumptions. This hierarchy requires the Company to use observable market data, when available, and to minimize the use of unobservable inputs when determining fair value.

Recurring Fair Value Measurements

The carrying values of cash, restricted cash, prepaid expenses, accounts receivable, accounts payable and accrued expenses, and other short-term assets and liabilities approximate their respective fair values due to the short-term maturities of these assets and liabilities.

The following tables show assets measured at fair value on a recurring basis as of March 31, 2017 and December 31, 2016:

(in thousands)	March 31, 2017 Level 1	Level 2	Level 3
Assets:			
Money market funds	$ 7,386	$ —	$ —
Totals	$ 7,386	$ —	$ —
Liabilities:			
Silver Creek warrant liability	$ —	$ —	$ 2,926
Totals	$ —	$ —	$ 2,926

(in thousands)	December 31, 2016 Level 1	Level 2	Level 3
Assets:			
Money market funds	$ 12,373	$ —	$ —
Totals	$ 12,373	$ —	$ —
Liabilities:			
Silver Creek warrant liability	$ —	$ —	$ 1,499
Totals	$ —	$ —	$ 1,499

In December 2016, Silver Creek issued warrants to purchase an aggregate of 1.9 million shares of Silver Creek Series C preferred stock (the "Silver Creek warrants"). During the first quarter of 2017, Silver Creek issued additional Silver Creek warrants to purchase an aggregate of 1.8 million shares of Silver Creek Series C preferred stock. The Silver Creek warrants were valued at $2.9 million and $1.5 million as of March 31, 2017 and December 31, 2016, respectively, using a Black-Scholes option pricing model, probability-weighted for different exercise scenarios. The key assumptions utilized in the Black-Scholes option pricing model as of March 31, 2017 were a risk-free interest rate of 2.2%, expected dividend yield of 0.0%, expected volatility of 62.2% and expected term of 6.9 years. The key assumptions utilized in the Black-Scholes option pricing model as of December 31, 2016 were a risk-free interest rate of 2.3%, expected dividend yield of 0.0%, expected volatility of 61.7% and expected term of 6.9 years. Changes in the fair value of the Silver Creek warrants are recognized as a component of "Other income, net" in the consolidated statements of operations and comprehensive loss.

There were no changes in valuation techniques or transfers between the fair value measurement levels during the three months ended March 31, 2017 or during the year ended December 31, 2016.

Other Fair Value Measurements

The estimated fair value of the Convertible Notes was $51.3 million as of March 31, 2017. The Company estimated the fair value of the Convertible Notes by using a quoted market rate in an inactive market, which is classified as a Level 2 input. The carrying value of the Convertible Notes was $47.9 million as of March 31, 2017 due to the bifurcation of the conversion feature of the Convertible Notes as described more fully in Note 10, "Borrowings."

As discussed in Note 10, "Borrowings," in December 2015, the Company closed a private placement of $175.0 million aggregate principal amount of 2022 Notes. The Company estimated the fair value of the 2022 Notes by using publicly-available information related to one of the 2022 Notes borrower's portfolio of debt investments based on unobservable inputs, which is classified as a Level 3 input. The estimated fair value of the 2022 Notes was $172.7 million as of March 31, 2017. The carrying value of the 2022 Notes was $170.1 million as of March 31, 2017.

8. Marketable Securities

As of both March 31, 2017 and December 31, 2016, the Company maintained only cash equivalents comprised of money market funds. As of March 31, 2017, the Company did not hold any securities that were in an unrealized loss position. There were no realized gains or losses on available-for-sale securities for the three months ended March 31, 2017 or 2016.

9. Accounts Payable, Accrued Expenses and Other

Accounts payable, accrued expenses and other as of March 31, 2017 and December 31, 2016 consisted of the following:

(in thousands)	March 31, 2017	December 31, 2016
Accounts payable	$ 7,502	$ 2,692
Accrued goods and services	6,180	8,233
Accrued clinical trial costs	10,390	8,776
Accrued drug purchase costs	—	480
Accrued payroll and related benefits	3,308	3,394
Accrued restructuring expenses	581	774
Accrued interest	6,448	2,100
Accrued dividends payable	19	19
Silver Creek warrant liability	2,926	1,499
Deferred tax incentives	1,402	1,402
Total accounts payable, accrued expenses and other	$ 38,756	$ 29,369

10. Borrowings

2022 Notes

On December 22, 2015, the Company closed a private placement of $175.0 million aggregate principal amount of 2022 Notes. As a result of this placement, the Company received net proceeds of approximately $168.5 million, after deducting private placement and offering expenses payable by the Company. The 2022 Notes bear interest at a rate of 11.50% per year, payable semi-annually on June 15 and December 15 of each year, beginning on June 15, 2016. The Company will pay semi-annual installments of principal on the 2022 Notes of $21.9 million each on June 15 and December 15 of each year, beginning on June 15, 2019. The 2022 Notes will mature on December 15, 2022, unless earlier redeemed or repurchased in accordance with their terms prior to such date.

The 2022 Notes are senior secured obligations of the Company and will be equal in right of payment to all existing and future pari passu indebtedness of the Company (including the Company's outstanding Convertible Notes), will be senior in right of payment to all existing and future subordinated indebtedness of the Company, will have the benefit of a security interest in the 2022 Notes collateral and will be junior in lien priority in respect of any asset-based lending collateral that secures any first priority lien obligations from time to time. The 2022 Notes contain customary covenants, including covenants that limit or restrict the Company's ability to incur liens, incur indebtedness and make certain restricted payments, but do not contain covenants related to future financial performance. The 2022 Notes are secured by a first priority lien on substantially all of the Company's assets.

The Company assessed the 2022 Notes pursuant to ASC 815, *Derivatives and Hedging*, to determine if any features necessitated bifurcation from the host instrument. The Company concluded that none of the embedded redemption features within the 2022 Notes require bifurcation, as these features are clearly and closely related to the host instrument.

Debt issuance costs incurred by the Company are accounted for as a direct deduction to the carrying value of the 2022 Notes and are amortized to interest expense using the effective interest method over the life of the 2022 Notes. For the three months ended March 31, 2017 and 2016, interest expense related to the 2022 Notes was $5.2 million and $5.2 million, respectively, and was included in discontinued operations.

The Company used a portion of the proceeds from the Asset Sale to extinguish the 2022 Notes. See Note 13, "Subsequent Events."

Convertible Notes

In July 2013, the Company issued $125.0 million aggregate principal amount of Convertible Notes in an underwritten public offering. As a result of the Convertible Notes offering, the Company received net proceeds of approximately $120.6 million, after deducting underwriting discounts and commissions and offering expenses payable by the Company.

The Convertible Notes bear interest at a rate of 4.50% per year, payable semiannually in arrears on January 15 and July 15 of each year, beginning on January 15, 2014. The Convertible Notes are general unsecured senior obligations of the Company and rank (i) senior in right of payment to any of the Company's indebtedness that is expressly subordinated in right of payment to the Convertible Notes, (ii) equal in right of payment to any of the Company's unsecured indebtedness that is not so subordinated, (iii)

effectively junior in right of payment to any of the Company's secured indebtedness to the extent of the value of the assets securing such indebtedness and (iv) structurally junior to all indebtedness and other liabilities (including trade payables) of the Company's subsidiaries.

The Company separately accounted for the liability and equity components of the Convertible Notes by bifurcating gross proceeds between the indebtedness, or liability component, and the embedded conversion option, or equity component. This bifurcation was done by estimating an effective interest rate as of the date of issuance for similar notes which do not contain an embedded conversion option. The gross proceeds received from the issuance of the Convertible Notes less the initial amount allocated to the indebtedness resulted in a $53.8 million allocation to the embedded conversion option. The embedded conversion option was recorded in stockholders' deficit and as debt discount, to be subsequently amortized as interest expense over the term of the Convertible Notes. Underwriting discounts and commissions and offering expenses totaled $4.4 million and were allocated to the indebtedness and the embedded conversion option based on their relative values.

On April 13, 2016, the Company entered into separate, privately-negotiated conversion agreements (the "Conversion Agreements") with certain holders of the Convertible Notes. Under the Conversion Agreements, such holders agreed to convert an aggregate principal amount of $64.2 million of Convertible Notes held by them. The Company initially settled each $1,000 principal amount of Convertible Notes surrendered for conversion by delivering 136 shares of the Company's common stock on April 18, 2016. In total, the Company issued an aggregate of 8,732,152 shares of its common stock on this initial closing date. In addition, pursuant to the Conversion Agreements, at the additional closings (as defined in the Conversion Agreements), the Company issued an aggregate of 3,635,511 shares of the Company's common stock representing an aggregate of $27.7 million as additional payments in respect of the conversion of the Convertible Notes. The number of additional shares was determined based on the daily VWAP (as defined in the Conversion Agreements) of the Company's common stock for each of the trading days in the 10-day trading period following the date of the Conversion Agreements. The issuance of 12,367,663 total shares of the Company's common stock pursuant to the Conversion Agreements resulted in an increase to common stock and additional paid-in capital of $101.0 million.

As a result of the conversion, the Company recognized an overall loss on extinguishment of $14.6 million representing the difference between the total settlement consideration transferred to the holders that was attributed to the liability component of the Convertible Notes, based on the fair value of that component at the time of conversion, and the net carrying value of the liability. The loss on extinguishment was recorded as interest expense during the second quarter of 2016. The remaining settlement consideration transferred was allocated to the reacquisition of the embedded conversion option and recognized as a $39.8 million reduction of additional paid-in capital. Transaction costs incurred with third parties related to the conversion were allocated to the liability and equity components and resulted in an additional $0.2 million of interest expense and a $0.2 million reduction of additional paid-in capital.

The outstanding Convertible Notes will mature on July 15, 2020 (the "Maturity Date"), unless earlier repurchased by the Company or converted at the option of holders. Holders may convert their Convertible Notes at their option at any time prior to the close of business on the business day immediately preceding April 15, 2020 only under the following circumstances:

- during any calendar quarter commencing after September 30, 2013 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any five consecutive trading day period (the "measurement period") in which the trading price (as defined in the Convertible Notes) per $1,000 principal amount of Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day; or
- upon the occurrence of specified corporate events set forth in the indenture governing the Convertible Notes.

On or after April 15, 2020 until the close of business on the business day immediately preceding the Maturity Date, holders may convert their Convertible Notes at any time, regardless of the foregoing circumstances.

Following the repayment and satisfaction in full of the Company's obligations to Hercules under the Loan Agreement, which occurred in December 2015, upon any conversion of the Convertible Notes, the Convertible Notes may be settled, at the Company's election, in cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock.

The initial conversion rate of the Convertible Notes is 160 shares of the Company's common stock per $1,000 principal amount of Convertible Notes, which is equivalent to an initial conversion price of $6.25 per share of common stock. The conversion rate will be subject to adjustment in some events, but will not be adjusted for any accrued and unpaid interest. In addition, following certain

corporate events that occur prior to the Maturity Date, the Company will increase the conversion rate for a holder who elects to convert its Convertible Notes in connection with such a corporate event in certain circumstances.

For the three months ended March 31, 2017 and 2016, interest expense related to the Convertible Notes was $1.7 million and $3.4 million, respectively. The decrease was primarily attributable to interest expense related to a reduction in the principal based on the conversion of some of the Convertible Notes that occurred in April 2016.

Future Minimum Payments under Outstanding Borrowings

Future minimum payments under outstanding borrowings as of March 31, 2017 are as follows:

(in thousands)	Convertible Notes
Remainder of 2017	$ 1,368
2018	2,736
2019	2,736
2020 and thereafter	63,527
Total	70,367
Less interest	(9,576)
Less unamortized discount	(12,863)
Less current portion	—
Long-term debt	$ 47,928

11. Stock-Based Compensation

As of December 31, 2015, there were 2.5 million shares of common stock available to be granted under the Company's 2011 Stock Incentive Plan (the "2011 Plan"). The 2011 Plan is administered by the Company's board of directors and permits the Company to grant incentive and non-qualified stock options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards.

In February 2016, 4.1 million additional shares of common stock became available for grant to employees, officers, directors and consultants under the 2011 Plan. At March 31, 2017, there were 5.5 million shares remaining available for grant under the 2011 Plan.

During the three months ended March 31, 2017 and 2016, the Company issued options to purchase 0.0 million and 3.1 million shares of common stock, respectively. These options generally vest over a three-year period for employees. Options granted to directors vest immediately.

The fair value of stock options granted to employees during the three months ended March 31, 2017 and 2016 was estimated at the date of grant using the following assumptions:

	Three Months Ended March 31,	
	2017	2016
Risk-free interest rate	2.10%	1.3-1.5%
Expected dividend yield	0%	0%
Expected term	5.8 years	5.8 years
Expected volatility	67-68%	67-68%

The Company uses the simplified method to calculate the expected term, as it does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate expected term. The computation of expected volatility is based on the historical volatility of comparable companies from a representative peer group selected based on industry and market capitalization. The risk-free interest rate is based on a treasury instrument whose term is consistent with the expected life of the stock options. Management estimates expected forfeitures based on historical experience and recognizes compensation costs only for those equity awards expected to vest.

The Company recognized stock-based compensation expense during the three months ended March 31, 2017 and 2016 as follows:

(in thousands)	Three Months Ended March 31, 2017	2016
Employee awards:		
Research and development expense	$ 468	$ 1,525
Selling, general and administrative expense	328	985
Total stock-based compensation expense	$ 796	$ 2,510

The following table summarizes stock option activity during the three months ended March 31, 2017:

(in thousands, except per share amounts)	Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at December 31, 2016	19,024	$ 5.77	5.97	$ 7,564
Granted	3	$ 4.00		
Exercised	(1,714)	$ 2.27		
Forfeited	(790)	$ 6.49		
Outstanding at March 31, 2017	16,523	$ 6.10	2.34	$ 1,989
Vested and expected to vest at March 31, 2017	16,367	$ 6.10	2.34	$ 1,989
Exercisable at March 31, 2017	13,827	$ 5.96	2.25	$ 1,989

The weighted-average grant date fair value per share of stock options granted during the three months ended March 31, 2017 and 2016 was $2.43 and $3.27, respectively.

The aggregate intrinsic value is calculated as the difference between the exercise price of the stock options and the fair value of the underlying common stock. The aggregate intrinsic value of stock options exercised during the three months ended March 31, 2017 and 2016 was $1.4 million and $2.1 million, respectively.

As of March 31, 2017, there was $3.0 million of total unrecognized stock-based compensation expense related to unvested employee stock awards. The Company expects to recognize this expense over a weighted-average period of approximately 1.6 years.

12. Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, "Revenue from Contracts with Customers (Topic 606)," which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. This guidance was originally effective for interim and annual periods beginning after December 15, 2016 and allows for adoption using a full retrospective method, or a modified retrospective method. Early adoption was originally not permitted. Subsequent to the issuance of ASU 2014-09, the FASB also issued the following updates related to ASC 606, *Revenue from Contracts with Customers*:

- In August 2015, the FASB issued ASU 2015-14, "Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date," whereby the effective date for the new revenue standard was deferred by one year. As a result of ASU 2015-14, the new revenue standard is now effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017, and early adoption is now permitted for annual periods beginning after December 15, 2016, including interim periods within that annual period.
- In March 2016, the FASB issued ASU 2016-08, "Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net)," to clarify the implementation guidance on principal versus agent considerations.
- In April 2016, the FASB issued ASU 2016-10, "Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing," to clarify the principle for determining whether a good or service is "separately identifiable" from other promises in the contract and to clarify the categorization of licenses of intellectual property.

- In May 2016, the FASB issued ASU 2016-12, “Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Technical Expedients,” to clarify guidance on transition, determining collectability, non-cash consideration and the presentation of sales and other similar taxes.

The Company is currently evaluating the potential impact that the adoption of this guidance may have on the consolidated financial statements.

In January 2016, the FASB issued ASU 2016-01, “Financial Statements – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Liabilities,” which contains a number of provisions related to the measurement, presentation and disclosure of financial instruments. This guidance will be effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual periods. Early adoption of this guidance is not permitted with the exception of certain specific presentation requirements that are not currently applicable to the Company. The Company does not anticipate a material impact to the consolidated financial statements as a result of the adoption of this guidance.

In February 2016, the FASB issued ASU 2016-02, “Leases (Topic 842),” which supersedes all existing lease accounting guidance within ASC 840, *Leases*. The new standard requires that lease assets and lease liabilities be recognized by lessees for those leases previously classified as operating leases under ASC 840, with limited exceptions. This update also creates a new definition of a lease and provides guidance as to whether a contract is or contains a lease. This guidance will be effective for annual reporting periods beginning after December 15, 2018, including interim periods within those annual reporting periods, and early adoption is permitted. The Company is currently evaluating the potential impact that the adoption of this guidance may have on the consolidated financial statements.

In March 2016, the FASB issued ASU 2016-06, “Derivatives and Hedging (Topic 815): Contingent Put and Call Options in Debt Instruments,” which clarifies the requirements for assessing whether contingent call or put options that can accelerate the repayment of principal on debt instruments are clearly and closely related to their debt hosts. This guidance will be effective for annual reporting periods beginning after December 15, 2016, including interim periods within those annual reporting periods, and early adoption is permitted. The Company adopted the guidance and it did not have an impact on the consolidated financial statements.

In March 2016, the FASB issued ASU 2016-09, “Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting,” which simplifies several areas of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either liabilities or equity and classification of excess tax benefits on the statement of cash flows. This guidance also permits a new entity-wide accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. This guidance will be effective for annual reporting periods beginning after December 15, 2016, including interim periods within those annual reporting periods, and early adoption is permitted. An entity that elects early adoption must adopt all of the amendments in the same period. The Company adopted the guidance and it did not have an impact on the consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, “Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments,” which represents a new credit loss standard that will change the impairment model for most financial assets and certain other financial instruments. Specifically, this guidance will require entities to utilize a new “expected loss” model as it relates to trade and other receivables. In addition, entities will be required to recognize an allowance for estimated credit losses on available-for-sale debt securities, regardless of the length of time that a security has been in an unrealized loss position. This guidance will be effective for annual reporting periods beginning after December 15, 2019, including interim periods within those annual reporting periods, and early adoption is permitted. The Company is currently evaluating the potential impact that the adoption of this guidance may have on the consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments,” which is intended to reduce diversity in practice in how entities present certain types of cash transactions in the statement of cash flows. This guidance also clarifies how the predominance principle should be applied when classifying cash receipts and cash payments that have attributes of more than one class of cash flows. This guidance will be effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual reporting periods, and early adoption is permitted. An entity that elects early adoption must adopt all of the amendments in the same period. The Company does not anticipate a material impact to the consolidated financial statements as a result of the adoption of this guidance.

Other accounting standards that have been issued by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on the Company’s consolidated financial statements upon adoption.

13. Subsequent Events

On April 3, 2017, the Company completed the sale of the Commercial Business to Ipsen, which is outlined more fully in Note 3, "Sale of Commercial Business."

In connection with the closing of the Asset Sale, on April 3, 2017, the Company entered into a transition services agreement with Ipsen pursuant to which the Company and Ipsen are providing certain services to each other for a period of 24 months following the closing, including Ipsen's agreement to manufacture MM-310 and to perform certain quality related services in accordance with a manufacturing services agreement being negotiated by the parties.

In connection with the completion of the Asset Sale, on April 3, 2017, the Company irrevocably deposited the redemption price of the 2022 Notes of $175.0 million outstanding aggregate principal amount, interest through the redemption date and an additional make-whole premium payment of approximately $20.1 million with U.S. Bank National Association as trustee (the "Trustee") under the Indenture dated as of December 22, 2015 (the "Indenture") and irrevocably instructed the Trustee to apply such amount to the redemption in full of the 2022 Notes on the redemption date of April 27, 2017. The Indenture was satisfied and discharged on April 3, 2017.

In connection with the completion of the Asset Sale, on April 3, 2017, the Company entered into a sublease with Ipsen, pursuant to which Ipsen is subleasing from the Company approximately 70,237 square feet of leased space in the Company's Cambridge, Massachusetts facility through the end of the term of the lease on June 30, 2019.

In connection with the completion of the Asset Sale, on April 3, 2017, the Company entered into an intellectual property license agreement with Ipsen, pursuant to which Ipsen granted to the Company a perpetual, worldwide, non-exclusive, royalty-free, fully paid-up license in and to all patents included in the transferred intellectual property, other than certain patents relating to generic liposomal technology, with respect to which the license will be exclusive, in each case for use outside of the Commercial Business. The Company granted to Ipsen a non-exclusive, royalty-free, fully paid up, perpetual, irrevocable and worldwide license to all patents it owned at the time of the closing of the transaction contemplated by the Asset Sale Agreement for use in connection with the Commercial Business.

On April 3, 2017, the Company entered into an amendment to its facility lease. This lease amendment reduces the final date of the term for approximately 29,157 square feet of leased space at the Company's current facility in Cambridge, Massachusetts from June 30, 2019 to May 15, 2018 or earlier upon landlord's election. As a result of this amendment, the Company's lease payments through 2019 will be reduced by approximately $1.7 million.

In connection with the completion of the Asset Sale and the completion of our strategic pipeline review, on April 3, 2017, the Company reduced its headcount by approximately 30%. Upon the closing of the Asset Sale, the Company had approximately 80 employees.

On April 5, 2017, the Company's board of directors authorized and declared a special cash dividend of $140.0 million on the Company's common stock. The special dividend is payable on May 26, 2017 to stockholders of record as of the close of business on May 17, 2017. The ex-dividend date for the special dividend will be May 30, 2017, the first trading day following the payment date.

On April 7, 2017, the previously disclosed Loan and Security Agreement (the "Credit Agreement") between the Company and BioPharma Credit Investments IV Sub, LP expired. No amounts were borrowed under the Credit Agreement.

In connection with a lawsuit filed by the trustee and certain holders of the Convertible Notes in the Court of Chancery in the State of Delaware, captioned *Wells Fargo Bank, National Association, Wolverine Flagship Fund Trading Limited, Highbridge International LLC, and Highbridge Tactical Credit & Convertibles Master Fund, L.P. v. Merrimack Pharmaceuticals, Inc.* (the "Delaware Action"), the Company has agreed to deposit, and in April 2017 did deposit, $60.0 million in proceeds from the Asset Sale into an escrow account. The funds will remain in escrow for the duration of the Delaware Action in order to provide security to the plaintiffs for their claims in the Delaware Action.

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

The following discussion of our financial condition and results of operations should be read in conjunction with our financial statements and the notes to those financial statements appearing elsewhere in this Quarterly Report on Form 10-Q and the audited consolidated financial statements and notes thereto and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2016 included in our Annual Report on Form 10-K. This discussion contains forward-looking statements that involve significant risks and uncertainties. As a result of many factors, such as those set forth in Part II, Item 1A. Risk Factors of this Quarterly Report on Form 10-Q, which are incorporated herein by reference, our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

We are a biopharmaceutical company based in Cambridge, Massachusetts that is outthinking cancer to ensure that patients and their families live fulfilling lives. Our mission is to transform cancer care through the smart design and development of targeted solutions based on a deep understanding of cancer pathways and biological markers. All our product candidates, including three in clinical studies and several others in preclinical development, fit into our strategy of (1) understanding the biological problems we are trying to solve, (2) designing specific solutions and (3) developing those solutions for biomarker-selected patients. This three-pronged strategy seeks to ensure optimal patient outcomes.

On April 3, 2017, we announced that we commenced operating as a new, refocused research and clinical development company in connection with the completion of our previously announced transaction, or the asset sale, with Ipsen S.A., or Ipsen. Pursuant to the Asset Purchase and Sale Agreement, dated as of January 7, 2017, or the asset sale agreement, between us and Ipsen, Ipsen acquired our right, title and interest in the non-cash assets, equipment, inventory, contracts and intellectual property primarily related to or used in our business operations and activities involving or relating to developing, manufacturing and commercializing ONIVYDE, our first commercial product, and MM-436, or the commercial business. We received $575.0 million in cash (subject to a working capital adjustment) upon the closing of the asset sale and are eligible to receive up to $450.0 million in additional regulatory approval-based milestone payments. We also retained the rights to receive net milestone payments of up to $33.0 million that may become payable pursuant to the license and collaboration agreement with Baxalta, which we refer to as the Baxalta agreement, for the ex-U.S. development and commercialization of ONIVYDE. As of March 31, 2017, all historical transactions impacting the consolidated statements of operations and comprehensive loss related to the asset sale have been reclassified under discontinued operations. All assets and liabilities related to the asset sale have been recorded under assets and liabilities held for sale as of March 31, 2017.

With the completion of the asset sale, we are prioritizing three clinical-stage programs:

- MM-121 (seribantumab), a fully human monoclonal antibody that binds to the ErbB3 (HER3) receptor and targets heregulin positive cancers. We are currently conducting the Phase 2 randomized SHERLOC clinical trial evaluating MM-121 in heregulin positive non-small cell lung cancer patients in combination with docetaxel or pemetrexed and plans to initiate another Phase 2 randomized clinical trial in 2017 in heregulin positive, hormone receptor positive, ErbB2 (HER2) negative, metastatic breast cancer patients;
- MM-141 (istiratumab), a fully human bispecific tetravalent monoclonal antibody designed to block tumor survival signals by targeting receptor complexes containing the insulin-like growth factor 1, or IGF-1, receptor and ErbB3 (HER3) cell surface receptors. We are currently conducting the Phase 2 randomized CARRIE clinical trial evaluating MM-141 in previously untreated metastatic pancreatic cancer patients with high levels of free IGF-1 in combination with nab-paclitaxel and gemcitabine; and
- MM-310, an antibody-directed nanotherapeutic, or ADN, that contains a novel prodrug of the highly potent chemotherapy docetaxel and targets the ephrin receptor A2, or EphA2, receptor, which is highly expressed in most solid tumor types. MM-310 was designed to improve the therapeutic window of docetaxel in major oncology indications, such as prostate, ovarian, bladder, gastric, pancreatic and lung cancers. We initiated a Phase 1 clinical trial to evaluate safety and preliminary activity of MM-310 in the first quarter of 2017.

In addition to our clinical-stage programs, we have several product candidates in preclinical development and a discovery effort advancing additional candidate medicines.

On January 8, 2017, we announced a planned reduction in our headcount by approximately 30% in connection with the closing of the asset sale and the completion of our strategic pipeline review, and upon the closing of the asset sale we had approximately 80 employees.

We have devoted substantially all of our resources to our drug discovery and development efforts, including advancing our systems biology approach, conducting clinical trials for our product candidates, protecting our intellectual property and providing general and administrative support for these operations. We currently have no products approved for sale and all of our revenue to date has been collaboration revenue and through sales of ONIVYDE and, to date, we have financed our operations primarily through private placements of our convertible preferred stock, collaborations, public offerings of our securities, secured debt financings, sales of ONIVYDE and the asset sale of ONIVYDE.

As of March 31, 2017, we had unrestricted cash and cash equivalents and marketable securities of $17.2 million. We believe that at our currently forecasted spending rates, our financial resources existing immediately following the completion of the asset sale, together with the net milestone payments we expect to receive under the Baxalta agreement, assuming certain milestones under such agreement are met, will be sufficient to fund our operations into the second half of 2019.

We have never been profitable and, as of March 31, 2017, we had an accumulated deficit of $984.5 million. Our loss from continuing operations was $29.2 million and $37.7 million for the three months ended March 31, 2017 and 2016, respectively. We expect to continue to incur significant expenses and operating losses for at least the next several years. We expect to continue to incur significant research and development expenses in connection with our ongoing activities, particularly as we continue the research, development and clinical trials of our product candidates, including multiple simultaneous clinical trials for certain product candidates. Until such time, if ever, as we can generate sufficient product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, licensing arrangements and other marketing and distribution arrangements. We also could engage in discussions with third parties regarding partnerships, joint ventures, combinations or divestitures of one or more of our businesses as we seek to further the development of our research programs, improve our cash position and maximize stockholder value. There can be no assurance as to the timing, terms or consummation of any financing, collaboration, licensing arrangement or other marketing and distribution arrangement, partnership, joint venture, combination or divestiture. We may be unable to raise capital when needed or on attractive terms, which would force us to delay, limit, reduce or terminate our research and development programs. We will need to generate significant revenues to achieve profitability, and we may never do so.

Strategic Partnerships, Licenses and Collaborations

Ipsen

Pursuant to the asset sale agreement, we are eligible to receive up to $450.0 million in additional regulatory approval-based milestone payments. We also retained the rights to receive net milestone payments that may become payable pursuant to the Baxalta agreement for the ex-U.S. development and commercialization of ONIVYDE for up to $33.0 million.

In connection with the asset sale, we entered into a transition services agreement with Ipsen, pursuant to which we and Ipsen provide certain services to each other for a period of 24 months, including Ipsen's agreement to manufacture MM-310 and to perform certain quality related services in accordance with a manufacturing services agreement being negotiated by us and Ipsen. Additionally, we entered into a sublease agreement with Ipsen under which Ipsen is subleasing approximately 70,237 square feet of our leased space in Cambridge, Massachusetts through the end of our lease term on June 30, 2019.

Baxalta

On September 23, 2014, we entered into the Baxalta agreement for the development and commercialization of ONIVYDE outside of the United States and Taiwan, or the licensed territory. In connection with Baxter International Inc.'s separation of the Baxalta business, the Baxalta agreement was assigned to Baxalta during the second quarter of 2015. As part of the Baxalta agreement, we granted Baxalta an exclusive, royalty-bearing right and license under our patent rights and know-how to develop and commercialize ONIVYDE in the licensed territory.

On April 3, 2017, the Baxalta agreement was assigned to Ipsen in connection with the completion of the sale of the commercial business. We retained the rights to receive net milestone payments that may become payable pursuant to the Baxalta agreement for the ex-U.S. development and commercialization of ONIVYDE for up to $33.0 million, which is comprised of potential payments of $18.0 million from the sale of ONIVYDE in two additional major European countries, $5.0 million related to the sale of ONIVYDE in the first major non-European, non-Asian country and $10.0 million for the first patient dosed in the planned small cell lung cancer trial.

On April 3, 2017, in connection with the asset sale, all agreements related to our collaboration with Baxalta and any associated obligations, including our agreement related to commercial supply of ONIVYDE, were assigned to Ipsen.

Actavis

In November 2013, we entered into a development, license and supply agreement with Watson Laboratories, Inc., or Actavis, which we refer to as the Actavis agreement, pursuant to which we agreed to develop, manufacture and exclusively supply the bulk form of doxorubicin hydrochloride (HCl) liposome injection to Actavis. On April 3, 2017, the Actavis agreement was assigned to Ipsen in connection with the completion of the asset sale.

Financial Obligations Related to the License and Development of ONIVYDE

In September 2005, Hermes BioSciences, Inc., or Hermes, which we acquired in October 2009, entered into a license agreement with PharmaEngine, Inc., or PharmaEngine, under which PharmaEngine received an exclusive license to research, develop, manufacture and commercialize ONIVYDE in Europe and certain countries in Asia. In May 2011, we entered into a new agreement with PharmaEngine, which we refer to as the PharmaEngine agreement, under which we reacquired all previously licensed rights for ONIVYDE, other than rights to commercialize ONIVYDE in Taiwan. As a result, we had the exclusive right to commercialize ONIVYDE in all territories in the world, except for Taiwan, where PharmaEngine has an exclusive commercialization right.

On April 3, 2017, in connection with the asset sale, the PharmaEngine agreement and all related agreements and any associated obligations, including our agreement related to our commercial supply of ONIVYDE to PharmaEngine, were assigned to Ipsen.

Financial Operations Overview

Revenues

As a result of the asset sale, all revenue related to the Commercial Business has been reclassified under discontinued operations.

In the future, we may generate revenue from a combination of research and development payments, license fees and other upfront payments, milestone payments, product sales and royalties in connection with future collaborations and licenses. We expect that any revenue we generate will fluctuate in future periods as a result of the timing of our or a collaborator's achievement of preclinical, clinical, regulatory and commercialization milestones, if at all, the timing and amount of any payments to us relating to such milestones and the extent to which any of our product candidates are approved and successfully commercialized by us or a collaborator. If we fail, or any future collaborator fails, to develop product candidates in a timely manner or obtain regulatory approval for them, our ability to generate future revenue, and our results of operations and financial position, would be materially adversely affected.

Research and development expenses

Research and development expenses consist of the costs associated with our research and discovery activities, including investment in our systems biology approach, conduct of preclinical studies and clinical trials, manufacturing development efforts and activities related to regulatory filings. Our research and development expenses consist of:

- employee salaries and related expenses, which include stock-based compensation and benefits for the personnel involved in our drug discovery and development activities;
- external research and development expenses incurred under agreements with third-party contract research organizations and investigative sites;
- manufacturing material expense for third-party manufacturing organizations and consultants, including costs associated with manufacturing product prior to product approval;
- license fees for and milestone payments related to in-licensed products and technologies; and
- facilities, depreciation and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities, depreciation of leasehold improvements and equipment, and laboratory and other supplies.

We expense research and development costs as incurred. Conducting a significant amount of research and development is central to our business model. Product candidates in late 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 late stage clinical trials. We expect to maintain or increase our research and development expenses for the foreseeable future as we continue to develop our clinical stage product candidates and further advance our preclinical products and earlier stage research and development projects.

We use our employee and infrastructure resources across multiple research and development programs. We track expenses related to our most advanced product candidates on a per project basis. Accordingly, we allocate internal employee-related and

infrastructure costs, as well as third-party costs, to each of these programs. We do not allocate to particular development programs either stock-based compensation expense or expenses related to preclinical programs. Costs that are not directly attributable to specific clinical programs, such as wages related to shared laboratory services, travel and employee training and development, are not allocated and are considered general research and discovery expenses.

The following table summarizes our principal product development programs, including the research and development expenses allocated to each clinical product candidate, for the three months ended March 31, 2017 and 2016:

	Three Months Ended March 31,	
(in thousands)	**2017**	**2016**
MM-121	$ 3,595	$ 4,478
MM-141	2,787	2,344
MM-310	1,300	1,197
Preclinical, general research and discovery	8,986	10,666
Legacy programs (MM-302, MM-151, MM-131)	4,469	7,792
Stock-based compensation	468	1,525
Total research and development expenses	$ 21,605	$ 28,002

In connection with the asset sale, all expenses related to the Commercial Business have been reclassified under discontinued operations.

The successful development of our clinical and preclinical product candidates is highly uncertain. At this time, other than as discussed below, we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the remainder of the development of any of our preclinical or clinical product candidates or the period, if any, in which material net cash flows from these product candidates may commence. This is due to the numerous risks and uncertainties associated with developing drugs, including the uncertainty of:

- the scope, rate of progress and expense of our ongoing, as well as any additional, clinical trials and other research and development activities;
- the potential benefits of our product candidates over other therapies;
- our ability to market, commercialize and achieve market acceptance for any of our product candidates that we are developing or may develop in the future;
- future clinical trial results;
- the terms and timing of regulatory approvals; and
- the expense of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the U.S. Food and Drug Administration, or FDA, or another regulatory authority were to require us to conduct clinical trials beyond those which we currently anticipate will be required for the completion of clinical development of a product candidate or if we experience significant delays in enrollment in any of our clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development.

MM-121 (seribantumab)

In February 2015, we initiated a global, open-label, biomarker-selected, randomized Phase 2 clinical trial of MM-121 in patients with heregulin positive, locally advanced or metastatic non-small cell lung cancer.

Additionally, in 2017, we intend to initiate a randomized Phase 2 clinical trial of MM-121 in patients with ErbB2 (HER2) negative, heregulin positive breast cancer.

MM-141 (istiratumab)

In May 2015, we initiated a randomized, double-blinded, placebo-controlled Phase 2 clinical trial of MM-141 in combination with nab-paclitaxel and gemcitabine, versus nab-paclitaxel and gemcitabine alone, in patients with newly diagnosed metastatic

pancreatic cancer who have high serum levels of free IGF-1. We have completed a multi-arm Phase 1 clinical trial evaluating the safety and tolerability of MM-141 as a monotherapy and in combination with everolimus or with nab-paclitaxel and gemcitabine in patients with advanced solid tumors.

MM-310

In March 2017, we initiated an open-label Phase 1 clinical trial of MM-310 in solid tumors to assess the safety, pharmacology and preliminary activity of MM-310.

General and administrative expenses

General and administrative expenses consist primarily of salaries and other related costs for personnel, including stock-based compensation expenses and benefits, in our commercial, legal, intellectual property, business development, finance, information technology, corporate communications, investor relations and human resources departments. Other general and administrative expenses include costs to support employee training and development, board of directors costs, depreciation, insurance expenses, facility-related costs not otherwise included in research and development expenses, professional fees for legal services, including patent-related expenses, and accounting and information technology services. We expect to maintain general and administrative expenses in future periods as we continue to support the development and commercialization of our clinical products.

Restructuring expenses

As a result of the corporate restructuring activities described above, we recognized total restructuring expenses of $5.3 million during the three months ended March 31, 2017 related to contractual termination benefits for employees with pre-existing severance arrangements and one-time employee termination benefits. These one-time employee termination benefits are comprised of severance, benefits and related costs, all of which are expected to result in cash expenditures. We anticipate that the majority of these payments will be made during the second quarter of 2017. The total restructuring expenses for the three months ended March 31, 2017 have been recorded within discontinued operations.

Interest expense

Interest expense consists primarily of cash and non-cash interest related to our 4.50% convertible notes due 2020, or the convertible notes, and our 11.50% senior secured notes due 2022, or the 2022 notes.

On April 3, 2017, in connection with the completion of the asset sale, we irrevocably deposited the aggregate redemption price of the 2022 notes, plus accrued and unpaid interest, with U.S. Bank National Association as trustee under the Indenture, dated as of December 22, 2015, or the indenture, and irrevocably instructed the trustee to apply such amount to the redemption in full of the 2022 notes on the redemption date of April 27, 2017. The indenture was satisfied and discharged on April 3, 2017.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our condensed consolidated financial statements, which we have prepared in accordance with the rules and regulations of the Securities and Exchange Commission, or the SEC, and generally accepted accounting principles in the United States, or GAAP. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, as well as the reported revenues and expenses during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. Estimates include estimated service periods and services to be completed under a collaboration, useful lives with respect to long-lived assets and intangible assets, accounting for stock-based compensation, contingencies, intangible assets, goodwill, in-process research and development, tax valuation reserves and accrued expenses. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Our actual results may differ from these estimates under different assumptions or conditions.

Our critical accounting policies and the methodologies and assumptions we apply under them have not materially changed since March 1, 2017, the date we filed our Annual Report on Form 10-K for the year ended December 31, 2016, other than those noted in Note 3, "Sale of Commercial Business," in the accompanying notes to the condensed consolidated financial statements. For more information on our critical accounting policies, refer to our Annual Report on Form 10-K for the year ended December 31, 2016.

Results of Operations

Comparison of the three months ended March 31, 2017 and 2016

Research and development expenses

(in thousands)	Three Months Ended March 31, 2017	2016
Research and development expenses	$ (21,605)	$ (28,002)
General and administrative expenses	(5,634)	(6,452)
Loss from continuing operations	(27,239)	(34,454)
Interest income	14	72
Interest expense	(1,979)	(3,290)
Other expense, net	(2)	(43)
Loss from continuing operations	$ (29,206)	$ (37,715)

Research and development expenses were $21.6 million for the three months ended March 31, 2017 compared to $28.0 million for the three months ended March 31, 2016, a decrease of $6.4 million, or 23%. This decrease was primarily attributable to:

- $3.3 million of decreased expenses related to our legacy programs as a result of our prioritization of MM-121, MM-141 and MM-310 and close-out activities associated with the legacy programs;
- $1.7 million of decreased expenses related to our preclinical, general research and discovery related to the refocus of early stage development spend and lower overhead costs to support general research and development expense related to the reduction in headcount; and
- $1.1 million of decreased expenses related to stock-based compensation due to lower headcount related to the restructuring activities.

General and administrative expenses

General and administrative expenses were $5.6 million for the three months ended March 31, 2017 compared to $6.5 million for the three months ended March 31, 2016, a decrease of $0.9 million, or 14%. This decrease was primarily attributable to lower headcount related to the restructuring activities.

Interest expense

Interest expense was $2.0 million for the three months ended March 31, 2017 compared to $3.3 million for the three months ended March 31, 2016, a decrease of $1.3 million, or 40%. This decrease was primarily attributable to interest expense related to a reduction in the principal balance of the convertible notes based on the conversion of some of our convertible notes on April 2016.

Liquidity and Capital Resources

Sources of liquidity

We have financed our operations to date primarily through private placements of our convertible preferred stock, collaborations, public offerings of our securities, secured debt financings, sales of ONIVYDE and the asset sale of ONIVYDE. Through March 31, 2017, we have received $268.2 million from the sale of convertible preferred stock and warrants, $126.7 million of net proceeds from the sale of common stock in our initial public offering and July 2013 follow-on underwritten public offering, $38.6 million of net proceeds from our 2015 “at the market offering” program, or the ATM offering, $39.6 million of net proceeds from a secured debt financing, $120.6 million of net proceeds from the issuance of the convertible notes in our July 2013 underwritten public offering, $168.5 million of net proceeds from the issuance of the 2022 notes, $487.6 million of upfront license fees, milestone payments, reimbursement of research and development costs and manufacturing services and other payments from our collaborations and $68.9 million of cash receipts related to ONIVYDE sales. We have also entered into an arrangement to use our manufacturing capabilities to manufacture drug product on behalf of Actavis, for which we have received $4.9 million in upfront fees and reimbursements as of March 31, 2017. In connection with the asset sale on April 3, 2017, we no longer will receive cash receipts related to ONIVYDE sales or upfront fees and reimbursements related to any manufacturing arrangement, as all rights to receive cash from these activities have been assigned to Ipsen. As of March 31, 2017, we had unrestricted cash and cash equivalents and marketable securities of $17.2 million.

As of March 31, 2017, within our unrestricted cash and cash equivalents, $2.8 million was cash and cash equivalents held by our majority owned subsidiary, Silver Creek Pharmaceuticals, Inc., or Silver Creek, which is consolidated for financial reporting purposes. This $2.8 million held by Silver Creek is designated for the operations of Silver Creek.

Cash flows

The following table provides information regarding our cash flows for the three months ended March 31, 2017 and 2016:

	Three Months Ended March 31,	
(in thousands)	**2017**	**2016**
Net cash used in operating activities	$ (10,156)	$ (53,523)
Net cash used in investing activities	(290)	(85,491)
Net cash provided by financing activities	6,077	1,645
Net decrease in cash and cash equivalents	$ (4,369)	$ (137,369)

Operating activities

Cash used in operating activities of $10.2 million during the three months ended March 31, 2017, of which $18.1 million was used by continuing operations and $8.0 million was provided by discontinued operations, was primarily a result of our $29.2 million net loss from continuing operations and a net increase in operating assets and liabilities of $7.6 million. The net increase in operating assets and liabilities during the three months ended March 31, 2017 was primarily driven by cash management strategies. This increase was offset by $3.5 million of non-cash items, including $0.8 million of stock-based compensation expense and $1.5 million in non-cash interest expense. Cash used in operating activities of $53.5 million during the three months ended March 31, 2016, of which $32.7 million was used by continuing operations and $20.8 million was used by discontinued operations, was primarily a result of our net loss from continuing operations of $37.7 million and a net decrease in operating assets and liabilities of $0.9 million. The net decrease in operating assets and liabilities during the three months ended March 31, 2016 was primarily driven by decreases in accounts payable and accrued expenses. These decreases were offset by $5.9 million of non-cash items, including $2.5 million of stock-based compensation expense and $2.2 million in non-cash interest expense.

Investing activities

Cash used in investing activities of $0.3 million during the three months ended March 31, 2017 was primarily due to purchases of property and equipment. Cash used in investing activities of $85.5 million during the three months ended March 31, 2016 was primarily due to purchases of marketable securities of $84.3 million in addition to $1.2 million of property and equipment purchases.

Financing activities

Cash provided by financing activities of $6.1 million during the three months ended March 31, 2017 was primarily due to $4.0 million of proceeds received from the exercise of stock options and $2.0 million of proceeds received from the issuance of Series C preferred stock by Silver Creek. Cash provided by financing activities of $1.6 million during the three months ended March 31, 2016 was due to proceeds received from the exercise of stock options.

Borrowings and other liabilities

In December 2015, we closed a private placement of $175.0 million aggregate principal amount of 2022 notes. The 2022 notes bear interest at a rate of 11.50% per year, payable semi-annually on June 15 and December 15 of each year, beginning on June 15, 2016. In connection with the completion of the asset sale, on April 3, 2017, we irrevocably deposited the aggregate redemption price of the 2022 notes of 111.5% of the principal amount, plus accrued and unpaid interest, with the trustee and irrevocably instructed the trustee to apply such amount to the redemption in full of the 2022 notes on the redemption date of April 27, 2017. The indenture was satisfied and discharged on April 3, 2017.

In July 2013, we issued convertible notes in the aggregate principal amount of $125.0 million. The convertible notes are convertible into common stock upon satisfaction of certain conditions. The convertible notes bear interest at a fixed rate of 4.50% per year, payable semiannually in arrears on January 15 and July 15 of each year. The convertible notes will mature on July 15, 2020 unless earlier repurchased by us or converted at the option of holders. On April 13, 2016, we entered into conversion agreements with certain holders of our convertible notes. Under the conversion agreements, such holders agreed to convert an aggregate principal amount of $64.2 million of convertible notes held by them. In connection with a lawsuit filed by the trustee and certain holders of the

Convertible Notes in the Court of Chancery in the State of Delaware, captioned *Wells Fargo Bank, National Association, Wolverine Flagship Fund Trading Limited, Highbridge International LLC, and Highbridge Tactical Credit & Convertibles Master Fund, L.P. v. Merrimack Pharmaceuticals, Inc.*, or the Delaware Action, we have agreed to deposit, and in April 2017 did deposit, $60.0 million in proceeds from the asset sale into an escrow account. The funds will remain in escrow for the duration of the Delaware Action in order to provide security to the plaintiffs for their claims in the Delaware Action. See Note 10, "Borrowings," in the accompanying notes to the condensed consolidated financial statements for additional information.

Funding requirements

We have incurred significant expenses and operating losses to date, and we expect to continue to incur significant expenses and operating losses for at least the next several years. We anticipate that we will continue to incur significant expenses as we:

- initiate or continue clinical trials of our most advanced product candidates;
- continue the research and development of our other product candidates;
- seek to discover additional product candidates;
- seek regulatory approvals for our product candidates that successfully complete clinical trials; and
- continue to provide the operational, financial and management information systems and personnel to support our product development.

We believe that at our currently forecasted spending rates, our financial resources existing immediately following the completion of the asset sale, together with the net milestone payments we expect to receive under the Baxalta agreement, assuming certain milestones under such agreement are met, will be sufficient to fund our operations into the second half of 2019. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates, and the extent to which we utilize collaborations with third parties to participate in their development and commercialization, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical trials. Our future capital requirements will depend on many factors, including:

- the progress and results of the clinical trials of our most advanced product candidates;
- our ability to establish and maintain additional collaborations on favorable terms , and the success of any such future collaborations;
- the timing and amount of potential milestone payments related to ONIVYDE that we may receive from Ipsen and Baxalta;
- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials for our other product candidates;
- the costs, timing and outcome of regulatory review of our current and future product candidates;
- the costs of preparing, filing and prosecuting patent applications and maintaining, enforcing and defending intellectual property-related claims; and
- the extent to which we acquire or invest in businesses, products and technologies.

Until such time, if ever, as we can generate sufficient product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, licensing arrangements and other marketing and distribution arrangements. We also could engage in discussions with third parties regarding partnerships, joint ventures, combinations or divestitures of one or more of our businesses as we seek to further the development of our research programs, improve our cash position and maximize stockholder value. There can be no assurance as to the timing, terms or consummation of any financing, collaboration, licensing arrangement or other marketing and distribution arrangement, partnership, joint venture, combination or divestiture. We do not have any committed external sources of funds. 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 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. For example, if we raise additional funds through marketing and distribution arrangements or other 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 product 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 product development or commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Commitments

Our contractual obligations and commitments were reported in our Annual Report on Form 10-K for the year ended December 31, 2016, which was filed with the SEC on March 1, 2017.

As described more fully in Note 3, "Sale of Commercial Business," and Note 13, "Subsequent Events," in connection with the completion of the asset sale, on April 3, 2017, we assigned to Ipsen all of our contracts relating to the commercial business, including our contracts with Baxalta, Actavis and PharmaEngine. As described more fully in Note 13, "Subsequent Events," in connection with the completion of the asset sale, on April 3, 2017, we entered into a sublease with Ipsen pursuant to which Ipsen subleases from us approximately 70,237 square feet of leased space in our Cambridge, Massachusetts facility through the end of the term of the lease on June 30, 2019. As described more fully in Note 13, "Subsequent Events," in connection with the completion of the asset sale, on April 3, 2017, we irrevocably deposited the redemption price of the 2022 Notes of $175.0 million outstanding aggregate principal amount, interest through the redemption date and an additional make-whole premium payment of approximately $20.1 million with U.S. Bank National Association as trustee under the indenture and irrevocably instructed the trustee to apply such amount to the redemption in full of the 2022 Notes on the redemption date of April 27, 2017. The indenture was satisfied and discharged on April 3, 2017.

As described more fully in Note 13, "Subsequent Events," on April 3, 2017, we entered into an amendment to our facility lease, pursuant to which the final date of the term for approximately 29,157 square feet of leased space at our current facility in Cambridge, Massachusetts was reduced from June 30, 2019 to May 15, 2018 or earlier upon landlord's election. As a result of this amendment, our lease payments through 2019 will be reduced by approximately $1.7 million.

There have been no other material changes from the contractual obligations and commitments previously disclosed in our Annual Report on Form 10-K.

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 SEC rules.

Recent Accounting Pronouncements

See Note 12, "Recent Accounting Pronouncements," in the accompanying notes to the condensed consolidated financial statements for a full description of recent accounting pronouncements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We invest in a variety of financial instruments, principally cash deposits, money market funds, securities issued by the U.S. government and its agencies and corporate debt securities. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and investments. We also seek to maximize income from our investments without assuming significant risk.

Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of 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, an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio. We have the ability and intention 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 sudden change in market interest rates on our investment portfolio.

We do not currently have any auction rate or mortgage-backed securities. We do not believe our cash, cash equivalents and marketable securities have significant risk of default or illiquidity, however we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value.

The convertible notes bear interest at a fixed rate of 4.50% per year, payable semi-annually in arrears on January 15 and July 15 of each year, beginning on January 15, 2014. As a result, we are not subject to interest rate risk with respect to the convertible notes.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2017. The term "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, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of March 31, 2017, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, 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 March 31, 2017 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.

On March 15, 2017, the trustee and certain holders of our convertible notes filed the Delaware Action in the Court of Chancery in the State of Delaware. The Delaware Action complaint alleges that the sale of the commercial business to Ipsen was a sale of "substantially all" of our assets and therefore constituted a Fundamental Change (as defined in the indenture governing the convertible notes) as of the closing of the asset sale, which would trigger (a) certain obligations under the indenture governing the convertible notes, including an offer to repurchase the convertible notes, and (b) an event of default if Ipsen does not assume the obligations under the indenture and execute a supplemental indenture with respect to the convertible notes. We have decided to proceed directly to trial. In connection with this decision and the plaintiffs' withdrawal of their motion for a preliminary injunction, we agreed to deposit, and in early April 2017 did deposit, into an escrow account $60.0 million in proceeds from the asset sale. On April 24, 2017, the plaintiffs filed an amended complaint that, among other things, includes additional allegations that an event of default has occurred under the indenture governing the convertible notes. In May 2017, we filed our answer and affirmative defenses to the amended complaint. Fact discovery is ongoing and expert discovery is scheduled to be completed prior to trial. The trial is currently scheduled for November 2017. We believe the Delaware Action is without merit and intend to vigorously defend against all claims asserted. However, if the Delaware Action is successful, we may be required to pay up to $60.8 million to repurchase the convertible notes, as well as additional interest and expenses of the plaintiffs, and/or we may be prohibited from issuing any of the funds in escrow as a special dividend to our stockholders.

On February 28, 2017, a putative stockholder class action suit was filed by a purported stockholder of ours in the Superior Court of Massachusetts for the County of Middlesex against us and our directors. The case was captioned *Robert Garfield v. Merrimack Pharmaceuticals Inc., et al.*, or the Garfield Action. The Garfield Action complaint alleged that our directors breached their fiduciary duties by entering into the asset sale agreement with Ipsen and that the definitive proxy statement relating to the asset sale contained inadequate disclosures and omissions. Although we believed that the Garfield Action was without merit, to avoid the risk of the litigation delaying or adversely affecting the asset sale and to minimize the expense of defending the litigation related to the asset sale, we agreed to make supplemental disclosures related to the asset sale and to pay the plaintiff's counsel $375,000 in attorney's fees in connection with the resolution of the Garfield Action. As a result, the Garfield Action was dismissed with prejudice.

We are not currently a party to any other 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 1 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 the Sale of our Commercial Business to Ipsen

Because the commercial business represented all of our revenues for fiscal year 2016, our business following the sale of the commercial business is substantially different than it was prior to such sale.

As a result of the completion of our previously announced asset sale with Ipsen, Ipsen acquired, pursuant to the asset sale agreement, our right, title and interest in the commercial business. The commercial business represented all of our revenues for the fiscal year 2016 and the three months ended March 31, 2017. Following the sale of the commercial business, we retained our non-commercial assets, including our clinical and preclinical development programs, or the pipeline business. Our results of operations and financial condition may be materially affected if we fail to grow our pipeline business, if we are unable to raise additional capital if needed to run the pipeline business, if we must incur significant costs in order to raise additional capital to run the pipeline business or if we are unable to successfully develop and commercialize our remaining product candidates.

The holders of certain of our outstanding convertible securities have asserted that the asset sale constitutes a "Fundamental Change" under the indenture that governs those convertible notes.

In July 2013, we issued $125.0 million aggregate principal amount of 4.50% convertible notes due 2020, or convertible notes, of which an aggregate principal amount of $60.8 million remains outstanding as of March 31, 2017. On March 15, 2017, the Delaware Action was filed by the trustee and certain holders of the convertible notes in the Court of Chancery in the State of Delaware, captioned *Wells Fargo Bank, National Association, Wolverine Flagship Fund Trading Limited, Highbridge International LLC, and Highbridge Tactical Credit & Convertibles Master Fund, L.P. v. Merrimack Pharmaceuticals, Inc.* The Delaware Action complaint alleges that the asset sale is a sale of "substantially all" of our assets and therefore constituted a Fundamental Change (as defined in the indenture governing the convertible notes) as of the closing of the asset sale, which would trigger (a) certain obligations under the indenture governing the convertible notes, including an offer to repurchase the convertible notes, and (b) an event of default if Ipsen does not assume the obligations under the indenture and execute a supplemental indenture with respect to the convertible notes. We have decided to proceed directly to trial and requested a schedule for discovery and trial that would result in a trial in fall 2017. In connection with this decision, we agreed to deposit, and in April 2017 did deposit, into an escrow account $60.0 million in proceeds from the asset sale. Although we believe the Delaware Action is without merit and intend to vigorously defend against all claims asserted, if the Delaware Action is successful, we may be required to pay up to $60.8 million to repurchase the convertible notes, plus additional interest, and/or we may be prohibited from issuing any of the funds in escrow as a special dividend to our stockholders. We may also incur significant expenses of litigation and, if the plaintiffs are successful, may be required to reimburse them for their expenses relating to the litigation.

We are, and in the future may be, subject to securities litigation, which is expensive and could divert our attention.

As discussed below, we are, and may in the future be, subject to securities class action litigation in connection with the asset sale. Securities litigation against us could result in substantial costs and divert our management's attention, which could seriously harm our business. For instance, the Garfield Action was filed by a purported stockholder in the Superior Court of Massachusetts for the County of Middlesex against us and our directors. The case is captioned *Robert Garfield v. Merrimack Pharmaceuticals Inc., et al*. The Garfield Action complaint alleged that our directors breached their fiduciary duties by entering into the asset sale agreement and that the definitive proxy statement relating to the asset sale contained inadequate disclosures and omissions. Although we believed that the Garfield Action was without merit, to avoid the risk of the litigation delaying or adversely affecting the asset sale and to minimize the expense of defending the litigation related to the asset sale, we agreed to make supplemental disclosures related to the asset sale and to pay the plaintiff's counsel $375,000 in attorney's fees in connection with the resolution of the Garfield Action. As a result, the plaintiff concluded that the claims in the Garfield Action have been mooted, and the Garfield Action was dismissed with prejudice. Nonetheless, there can be no guarantee that there will not be additional securities class action litigation in connection with the asset sale.

Because our business is smaller following the sale of the commercial business, there is a possibility that our common stock may be delisted from the NASDAQ Global Market if we fail to satisfy the continued listing standards.

Even though we currently satisfy the continued listing standards for the NASDAQ Global Market, following the completion of the sale of the commercial business, our business is smaller and, therefore, we may fail to satisfy the continued listing standards of the NASDAQ Global Market. In the event that we are unable to satisfy the continued listing standards of the NASDAQ Global Market, our common stock may be delisted. Any delisting of our common stock from the NASDAQ Global Market could adversely affect our ability to attract new investors, decrease the liquidity of our outstanding shares of common stock, reduce our flexibility to raise additional capital, reduce the price at which our common stock trades and increase the transaction costs inherent in trading such shares with overall negative effects for our stockholders. In addition, delisting of our common stock could deter broker-dealers from making a market in or otherwise seeking or generating interest in our common stock, and might deter certain institutions and persons from investing in our securities at all. For these reasons and others, delisting could adversely affect the price of our common stock and our business, financial condition and results of operations.

There can be no guarantee that Ipsen will comply with its obligation to use commercially reasonable efforts in connection with the development of ONIVYDE or that the milestones set forth in the Baxalta agreement will be achieved.

Ipsen has agreed to use commercially reasonable efforts to develop ONIVYDE in connection with obtaining the regulatory approval by the FDA of ONIVYDE for certain indications. Although the results of this approval process may enable Ipsen to achieve the milestones necessary for us to receive the contingent payments under the asset sale agreement, there is no guarantee that Ipsen will take the steps set forth in the asset sale agreement and that such development will lead to the successful approval of ONIVYDE for such additional indications. Therefore, there can be no guarantees that any of the milestones set forth in the asset sale agreement will be achieved and that we will receive any future contingent payments.

Additionally, although the asset sale agreement entitles us to receive certain net milestone payments of up to $33.0 million that may become payable under the Baxalta agreement, achievement of such milestones and payment of any or all of the $33.0 million is not guaranteed.

We cannot predict the timing or amount of any distributions to our stockholders.

Our board of directors authorized and declared a special cash dividend of $140.0 million on our common stock, payable in May 2017. If the Delaware Action, which we believe is without merit, is resolved favorably for us, the board intends to declare an additional special dividend at the conclusion of the Delaware Action to return to stockholders any remaining escrow funds, assuming that we have sufficient surplus at such time to allow for the declaration of this dividend. We cannot predict the exact timing or amount of such additional special dividend at this time, or the potential outcome of the Delaware Action or any other potential litigation challenging our position that we are not obligated to repurchase the convertible notes. In addition, our board of directors will need to approve such additional special dividend, and will only authorize such additional special dividend if there is sufficient surplus at that time. In the event there is not sufficient surplus, we may be unable to pay the expected dividend or any dividend.

Ipsen is not assuming any of the excluded liabilities under the asset sale agreement.

Pursuant to the asset sale agreement, Ipsen assumed only certain specified liabilities set forth in the asset sale agreement and did not assume all of the liabilities associated with the commercial business. Certain liabilities remain with us post-closing. While we believe that we have adequately accrued for these liabilities or are adequately insured against certain of the risks associated with such excluded liabilities, there can be no assurances that additional expenditures will not be incurred in resolving any such liabilities.

The asset sale agreement may expose us to contingent liabilities.

We have agreed to indemnify Ipsen for certain breaches of representations, warranties or covenants made by us in the asset sale agreement and for certain specified existing litigation. We have agreed that if we cannot pay our indemnification obligations, Ipsen will have set-off rights against any future contingent payments. Significant indemnification claims by Ipsen could further materially and adversely affect our financial condition and/or significantly reduce any future contingent payments.

Risks Related to Our Financial Position and Need for Additional Capital

We have incurred significant losses since our inception. We expect to incur operating losses for the foreseeable future and may never achieve or maintain profitability.

Since inception, we have incurred significant operating losses. Our net loss was $29.2 million for the three months ended March 31, 2017, $153.5 million for the year ended December 31, 2016, $147.8 million for the year ended December 31, 2015 and

$83.6 million for the year ended December 31, 2014. As of March 31, 2017, we had an accumulated deficit of $984.5 million. To date, we have financed our operations primarily through private placements of our convertible preferred stock, collaborations, public offerings of our securities, secured debt financings, sales of ONIVYDE and the asset sale of ONIVYDE. We have devoted substantially all of our efforts to research and development, including clinical trials and recently to commercialization of our first product, ONIVYDE, which was sold to Ipsen. We have not completed development of or commercialized any other therapeutic product candidates or diagnostics other than ONIVYDE. We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. We anticipate that our expenses will increase substantially as we:

- initiate or continue clinical trials of our most advanced product candidates;
- continue the research and development of our other product candidates;
- seek to discover additional product candidates;
- seek regulatory approvals for our product candidates that successfully complete clinical trials; and
- continue to provide the operational, financial and management information systems and personnel to support our product development.

To become and remain profitable, we must succeed in developing and commercializing products with significant market potential. This will require us to be successful in a range of challenging activities, including discovering product candidates, completing preclinical testing and clinical trials of our product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing and selling or partnering those products for which we may seek and receive regulatory approval. We may never succeed in these activities and may never generate revenues that are significant or large enough to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, diversify our product offerings or continue our operations. A decline in the value of our company could also cause our stockholders to lose all or part of their investment.

Our substantial indebtedness may limit cash flow available to invest in the ongoing needs of our business.

We currently have, and will continue to have, a significant amount of indebtedness. In July 2013, we issued $125.0 million aggregate principal amount of convertible notes, of which an aggregate principal amount of $60.8 million remains outstanding as of March 31, 2017. In December 2015, we issued $175.0 million aggregate principal amount of 11.50% senior secured notes due 2022, or 2022 notes. Although we used a portion of the proceeds from the asset sale to extinguish the 2022 notes, we could in the future incur additional indebtedness beyond such amounts.

Our substantial debt combined with our other financial obligations and contractual commitments could have significant adverse consequences, including:

- requiring us to dedicate a substantial portion of cash flow from operations to the payment of interest on, and principal of, our debt, which will reduce the amounts available to fund working capital, capital expenditures, product development efforts and other general corporate purposes;
- increasing our vulnerability to adverse changes in general economic, industry and market conditions;
- obligating us to restrictive covenants that may reduce our ability to take certain corporate actions or obtain further debt or equity financing;
- limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we compete; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or better debt servicing options.

We intend to satisfy our current and future debt service obligations with our existing cash and cash equivalents and funds from external sources. However, we may not have sufficient funds or may be unable to arrange for additional financing to pay any amounts due under our debt as it exists at any future point in time. Funds from external sources may not be available on acceptable terms, if at all. In addition, a failure to comply with the covenants under our existing debt instruments could result in an event of default under those instruments. In the event of an acceleration of amounts due under our debt instruments as a result of an event of default, including upon the occurrence of an event that would reasonably be expected to have a material adverse effect on our business, operations, properties, assets or condition or a failure to pay any amount due, we may not have sufficient funds or may be unable to arrange for additional financing to repay our indebtedness or to make any accelerated payments, and the lenders could seek to enforce security interests in the collateral securing such indebtedness. In addition, the covenants under our existing debt instruments and the pledge of our assets as collateral limit our ability to obtain additional debt financing.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our obligations.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. We currently do not generate cash flow from operations and, in the future, our business may not generate cash flow from operations sufficient to service our debt and make necessary capital expenditures. If we are unable to generate cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity or debt financing on terms that may be unfavorable to us or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities at all or engage in these activities on desirable terms, which could result in a default on our debt obligations or future indebtedness.

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

We will need substantial additional funding in connection with our continuing operations. We expect to continue to incur significant research and development expenses in connection with our ongoing activities, particularly as we continue the research, development and clinical trials of, and seek regulatory approval for, our product candidates. 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 commercialization efforts.

Upon the closing of the asset sale with Ipsen, which occurred on April 3, 2017, we received a $575.0 million upfront cash payment from Ipsen (subject to a working capital adjustment). We used these proceeds to redeem the 2022 notes, including payment of the $175.0 million outstanding aggregate principal amount, interest through the redemption date and an additional make-whole premium payment of approximately $20.1 million, and our board of directors declared a special cash dividend of $140.0 million payable on May 26, 2017 to stockholders of record as of the close of business on May 17, 2017. Additionally, if certain milestones under the Baxalta agreement are met, we currently expect to receive up to an aggregate of $33.0 million in net milestone payments in 2017. We believe that at our currently forecasted spending rates, our financial resources existing immediately following the completion of the asset sale, together with the net milestone payments we expect to receive under the Baxalta agreement, assuming certain milestones under such agreement are met, will be sufficient to fund our operations into the second half of 2019. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates, and the extent to which we utilize collaborations with third parties to participate in their development and commercialization, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical trials. Our future capital requirements will depend on many factors, including:

- the progress and results of the clinical trials of our most advanced product candidates;
- our ability to establish and maintain additional collaborations on favorable terms , and the success of any such future collaborations;
- the timing and amount of potential milestone payments related to ONIVYDE that we may receive from Ipsen and Baxalta;
- the scope, progress, results and costs of preclinical development, laboratory testing and clinical trials for our product candidates;
- the costs, timing and outcome of regulatory review of our current and future product candidates;
- the costs of preparing, filing and prosecuting patent applications and maintaining, enforcing and defending intellectual property-related claims; and
- the extent to which we acquire or invest in businesses, products and technologies.

Conducting preclinical testing and clinical trials is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data required to obtain regulatory approval and, even if regulatory approval is obtained, achieve product sales of any of our product candidates. In addition, any of our product candidates, even if approved, may not achieve commercial success. If we fail to generate sufficient revenues from collaborations or the commercialization of any of our product candidates, we will need to continue to rely on additional financing to achieve our business objectives.

Our independent registered public accounting firm included an explanatory paragraph relating to our ability to continue as a going concern in its report on our audited financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2016.

The report from our independent registered public accounting firm for the year ended December 31, 2016 includes an explanatory paragraph stating that our losses from operations and required additional funding to finance our operations raise substantial doubt about our ability to continue as a going concern. If we are unable to obtain sufficient funding, our business, prospects, financial condition and results of operations will be materially and adversely affected and we may be unable to continue as a going concern. If we are unable to continue as a going concern, we may have to liquidate our assets and may receive less than the value at which those assets are carried on our audited financial statements, and it is likely that investors will lose all or a part of their investment. If we seek additional financing to fund our business activities in the future and there remains substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding to us on commercially reasonable terms or at all.

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

We do not have any committed external source of funds. Sources of funds may not be available or, if available, may not be available on terms satisfactory to us and could result in significant stockholder dilution.

Until such time, if ever, as we can generate sufficient product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, licensing arrangements and other marketing and distribution arrangements. We also could engage in discussions with third parties regarding partnerships, joint ventures, combinations or divestitures of one or more of our businesses as we seek to further the development of our research programs, improve our cash position and maximize stockholder value. There can be no assurance as to the timing, terms or consummation of any financing, collaboration, licensing arrangement or other marketing and distribution arrangement, partnership, joint venture, combination or divestiture.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our existing common stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our stockholders. Additional 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, and these covenants may also require us to attain certain levels of financial performance and we may not be able to do so; any such failure may result in the acceleration of such debt and the foreclosure by our creditors on the collateral we used to secure the debt. The debt issued in a debt financing would also be senior to our outstanding shares of capital stock, and may rank equally with or senior to the convertible notes, upon our liquidation. Our existing indebtedness and the pledge of our assets as collateral limit our ability to obtain additional debt financing. If we raise additional funds through marketing and distribution arrangements or other 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 product 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 product development or commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our investments are subject to risks that could result in losses.

We have invested and plan to continue to invest our cash in a variety of financial instruments, principally securities issued by the U.S. government and its agencies, investment grade corporate bonds, including commercial paper, and money market instruments. All of these investments are subject to credit, liquidity, market and interest rate risk. Such risks, including the failure or severe financial distress of the financial institutions that hold our cash, cash equivalents and investments, may result in a loss of liquidity, impairment to our investments, realization of substantial future losses, or a complete loss of the investments in the long-term, which may have a material adverse effect on our business, results of operations, liquidity and financial condition. In order to manage the risk to our investments, we maintain an investment policy that, among other things, limits the amount that we may invest in any one issue or any single issuer and requires us to only invest in high credit quality securities.

Risks Related to the Development and Commercialization of Our Product Candidates

We depend heavily on the success of our clinical stage product candidates. All of our product candidates are in preclinical and clinical development. Clinical trials of our product candidates may not be successful. If we are unable to successfully commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.

We invest a significant portion of our efforts and financial resources in the development of our clinical stage product candidates for the treatment of various types of cancer. All of our product candidates are still in preclinical and clinical development. Our ability to generate meaningful product revenues will depend heavily on the successful development of our product candidates. The success of our product candidates, which include both our therapeutic product candidates and diagnostic candidates, will depend on several factors, including the following:

- successful enrollment in, and completion of, preclinical studies and clinical trials;
- receipt of marketing approvals from the FDA and similar regulatory authorities outside the United States for our product candidates, including our diagnostics;
- establishing commercial manufacturing capabilities, which we anticipate doing primarily through arrangements with third-party manufacturers;
- launching commercial sales of any approved products, whether alone or in collaboration with others;
- acceptance of any approved products by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- a continued acceptable safety profile of any products following approval; and
- qualifying for, maintaining, enforcing and defending intellectual property rights and claims.

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

For example, in connection with our strategic review of our pipeline which was completed in January 2017, we amended several of our clinical trials such as our Phase 2 clinical trial of MM-121 and our Phase 2 clinical trial of MM-141, resulting in changes to their power, design and timing, and also discontinued several trials, including our Phase 2 clinical trial of MM-302.

If clinical trials of our product candidates fail to demonstrate safety and efficacy to the satisfaction of the FDA or similar regulatory authorities outside the United States or do not otherwise produce positive results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

We may never receive approval to commercialize our product candidates in the United States or other jurisdictions. Before obtaining regulatory approval for the sale of our product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of our product 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 of our clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and successful interim results of a clinical trial do not necessarily predict successful final results.

We may experience numerous unexpected events during, or as a result of, clinical trials that could delay or prevent our ability to receive regulatory approval or commercialize our product candidates, including:

- regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- clinical trials of our product candidates may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be insufficient or slower than we anticipate or patients may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;

- we might have to suspend or terminate clinical trials of our product candidates for various reasons, including a finding of a lack of clinical response or a finding that the patients are being exposed to unacceptable health risks;
- regulators or institutional review boards may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements;
- the cost of clinical trials of our product candidates may be greater than we anticipate;
- the supply or quality of our product candidates, diagnostics or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate or prohibitively expensive; and
- our product candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators to suspend or terminate the trials.

For example, in December 2016, we decided to discontinue our Phase 2 clinical trial of MM-302 in combination with trastuzumab in patients with ErbB2 (HER2) positive, locally advanced or metastatic breast cancer based on an opinion from the Data Safety Monitoring Board that continuing the clinical trial would be unlikely to demonstrate benefit over the comparator treatments. We do not plan to invest in additional development of MM-302 at this time. Previously, in our Phase 2 clinical trial of MM-121 in patients with non-small cell lung cancer, two of the three cohorts (Groups A and C) failed to meet their primary endpoints, and the third cohort (Group B) did not pass its planned interim analysis and ceased enrolling patients. Additionally, we did not meet the primary endpoints in our previous Phase 2 clinical trials of MM-121 in patients with ovarian cancer or in patients with breast cancer, although our ongoing biomarker analysis in each trial identified a potential subpopulation of patients potentially benefiting from MM-121 in combination with either paclitaxel or exemestane, respectively.

Preclinical and clinical data may not be predictive of the success of later clinical trials, and are often susceptible to varying interpretations and analyses. Many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their products.

If we are required to conduct additional clinical trials or other testing of our product candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our product 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 product candidates;
- not obtain marketing approval at all;
- obtain approval for indications that are not as broad as intended;
- have the product removed from the market after obtaining marketing approval;
- be subject to additional post-marketing testing requirements;
- be subject to restrictions on how the product is distributed or used; or
- be unable to obtain reimbursement for use of the product.

Delays in testing or approvals may result in increases to our product development costs. We do not know whether any clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all.

Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do and impair our ability to commercialize our product candidates and may harm our business and results of operations.

If serious adverse or undesirable side effects are identified during the development of our product candidates or following their approval and commercialization, we may need to modify or abandon our development or marketing of such product or product candidate.

All of our product candidates are still in preclinical or clinical development and their risk of failure is high. It is impossible to predict when or if any of our product candidates will prove effective or safe in humans or will receive regulatory approval, and it is impossible to ensure that safety or efficacy issues will not arise following regulatory approval. Currently marketed therapies for solid tumors are generally limited to some extent by their toxicity. Use of our product candidates as monotherapies in clinical trials also has resulted in adverse events consistent in nature with other marketed therapies. When used in combination with other marketed or investigational therapies, our product candidates may exacerbate adverse events associated with the other therapy. If our products or

product candidates, either alone or in combination with other therapies, result in undesirable side effects or have characteristics that are unexpected, we may need to modify or abandon their development or marketing.

If we experience delays in the enrollment of patients in our 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 product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials to obtain a statistically significant result as required by the FDA or other regulatory authorities. In addition, many of our competitors have ongoing clinical trials for product candidates that could be competitive with our product candidates. Patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates or rely upon treatment with existing therapies that may preclude them from eligibility for our clinical trials.

Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of the company to decline and limit our ability to obtain additional financing. Our inability to enroll a sufficient number of patients for any of our current or future clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether.

In general, we forecast enrollment for our clinical trials based on experience from previous clinical trials and monitor enrollment to be able to make adjustments to clinical trials when appropriate, including as a result of slower than expected enrollment that we experience from time to time in our clinical trials. For example, we experienced slower than expected enrollment in our Phase 2 clinical trial of MM-121 in combination with exemestane for hormone receptor positive breast cancer. In response, we revised the entry criteria for the clinical trial to correspond with changes in clinical practice and also expanded the number of sites and countries participating in the clinical trial. It is possible that slow enrollment in other clinical trials in the future could require us to make similar adjustments. If these adjustments do not overcome problems with slow enrollment, we could experience significant delays or abandon the applicable clinical trial altogether.

If we are unable to successfully develop diagnostics for our therapeutic product candidates, or experience significant delays in doing so, we may not realize the full commercial potential of our therapeutics.

An important component of our business strategy is to develop, either alone or together with third parties, diagnostics for each of our therapeutic product candidates. There has been limited success to date industry-wide in developing diagnostics. To be successful, we will need to address a number of scientific, technical, regulatory and logistical challenges.

All of our diagnostic candidates are in preclinical or clinical development. We have limited experience in the development of diagnostics and may not be successful in developing appropriate diagnostics to pair with any of our therapeutic product candidates that receive marketing approval. The FDA and similar regulatory authorities outside the United States are generally expected to regulate *in vitro* companion diagnostics as medical devices and *in vivo* companion diagnostics as drugs. In each case, companion diagnostics require separate regulatory approval prior to commercialization. Given our limited experience in developing diagnostics, we expect to rely in part on third parties for their design, development and manufacture. If we, or any third parties that we engage to assist us, are unable to successfully develop diagnostics for our therapeutic product candidates, or experience delays in doing so, the development of our therapeutic product candidates may be adversely affected, our therapeutic product candidates may not receive marketing approval and we may not realize the full commercial potential of any therapeutics that receive marketing approval. As a result, our business would be harmed, possibly materially.

Any of our product candidates that receive regulatory approval may fail to achieve the degree of market acceptance by physicians, patients, healthcare payors and others in the medical community necessary for commercial success.

Even if any of our product candidates receive marketing approval, they may nonetheless not gain sufficient market acceptance by physicians, patients, healthcare payors and others in the medical community. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors that may be uncertain or subjective, including:

- the prevalence and severity of any side effects;
- efficacy and potential advantages or disadvantages compared to alternative treatments;
- the price we charge for our product candidates;

- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- our ability to successfully develop diagnostics that effectively identify patient populations likely to benefit from treatment with our therapeutic products;
- the strength of marketing and distribution support; and
- sufficient third-party coverage or reimbursement.

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

The development and commercialization of new therapeutic and diagnostic products is highly competitive. We face competition with respect to our current product candidates, and will face competition with respect to any products that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Several large pharmaceutical and biotechnology companies currently market and sell products for the treatment of the solid tumor indications for which we are developing our product candidates. 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. Many of these competitors are attempting to develop therapeutics for our target indications.

We are developing our product candidates for the treatment of solid tumors. There are a variety of available therapies marketed for solid tumors. In many cases, these drugs are administered in combination to enhance efficacy. Some of these drugs are branded and subject to patent protection, and others are available on a generic basis. Many of these approved drugs are well established therapies and are widely accepted by physicians, patients and third-party payors. This may make it difficult for us to achieve our business strategy of replacing existing therapies with our product candidates.

There are also a number of products in late stage clinical development to treat solid tumors. Our competitors may develop products that are more effective, safer, more convenient or less costly than any that we are developing or that would render our product candidates obsolete or non-competitive. Our competitors may also obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours. In addition, our ability to compete may be affected because in many cases insurers or other third-party payors seek to encourage the use of generic products. There are many generic products currently on the market for the indications that we are pursuing, and additional products are expected to become available on a generic basis over the coming years.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products 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 third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Even if we are able to commercialize any of our product candidates, those product candidates may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, which could harm our business.

The regulations that govern marketing approvals, pricing and reimbursement for new therapeutic and diagnostic products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing 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 regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain regulatory approval.

Our ability to commercialize any approved products successfully also will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from third-party payors, including government payors such as Medicare and Medicaid, private health insurers and managed care organizations. There have been, and we expect there will

continue to be, legislative and regulatory proposals to change the healthcare system in ways that could impact our ability to sell our products profitably. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. The federal government, state legislatures and foreign governments have shown significant interest in implementing cost containment programs to limit the growth of government-paid healthcare costs, including price controls, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs. Adoption of such controls and measures, and tightening of restrictive policies in jurisdictions with existing controls and measures, could limit payments for pharmaceuticals and the other product candidates that we are developing and could have a material adverse effect our net revenue and results.

Third-party payors decide which drugs they will pay for and establish reimbursement and co-pay levels. The growing emphasis on managed care in the United States has increased and we expect will continue to increase the pressure on drug pricing. Third-party payors are increasingly challenging the prices charged for medical products and services and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. If these third-party payors do not consider our products to be cost-effective compared to other available therapies, they may not cover our products after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products at a profit. In order to secure coverage and reimbursement for any product that might be approved for sale, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable regulatory approvals. Even with clinical trials, our product candidates may be considered less safe, less effective or less cost-effective than other products, and third-party payors may not provide coverage and reimbursement for our products or any of our product candidates that we commercialize, in whole or in part.

The process for determining whether a payor will provide coverage for a drug product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the drug product once coverage is approved. Third-party payors may limit coverage to specific drug products on a formulary, which might not include all of the approved drugs for a particular indication, and a payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved.

We cannot be sure that reimbursement will be available for any product that we commercialize and, if reimbursement is available, what the level of reimbursement will be. Reimbursement may impact the demand for, or the price of, any product for which we obtain marketing approval. Third-party reimbursement may not be sufficient to enable us to maintain price levels high enough to realize an appropriate return on our investment in product development. Obtaining reimbursement for our products may be particularly difficult because of the higher prices often associated with products administered under the supervision of a physician. In addition, coverage policies, third-party reimbursement rates and drug pricing regulation may change at any time. Thus, even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future. The marketability of any products for which we receive regulatory approval for commercial sale may also suffer if the government and third-party payors fail to provide adequate coverage and reimbursement. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate that we successfully develop.

Payors also are increasingly considering new metrics as the basis for reimbursement rates, such as average sales price, average manufacturer price and actual acquisition cost. The existing data for reimbursement based on these metrics is relatively limited, although certain states have begun to survey acquisition cost data for the purpose of setting Medicaid reimbursement rates. Centers for Medicare & Medicaid Services, or CMS, surveys and publishes retail community pharmacy acquisition cost information in the National Average Drug Acquisition Cost files to provide state Medicaid agencies with a basis of comparison for their own reimbursement and pricing methodologies and rates.

Moreover, there may be significant delays in obtaining reimbursement for any approved products, and coverage may be more limited than the purposes for which the product is approved by the FDA or regulatory authorities in other countries. Eligibility for reimbursement does not imply that any product will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Interim payments for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Payment rates may vary according to the use of the product and the clinical setting in which it is used, may be based on payments allowed for lower cost products that are already reimbursed, and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future weakening of laws that presently restrict imports of products 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 appropriate payment rates from both government-funded and private payors for new products that we develop could therefore have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products, and our overall financial condition.

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

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and an even greater risk related to the commercial sale of any products that we may develop. If we cannot successfully defend ourselves against claims that any of our product candidates caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

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

We currently hold $10.0 million in product liability insurance coverage, which may not be adequate to cover all liabilities that we may incur. 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 or every liability that may arise.

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

Because we have limited financial and managerial resources, we focus on research programs and product candidates for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products.

We have based our research and development efforts on our systems biology approach to biomedical research. Notwithstanding our large investment to date and anticipated future expenditures in our proprietary approach to research and development, we may fail to address or develop product candidates or indications based on other scientific approaches that may offer greater commercial potential or for which there is a greater likelihood of success.

We also may not be successful in our efforts to identify or discover new or additional product candidates through our systems biology approach. Research programs to identify new product candidates require substantial technical, financial and human resources. These research programs may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development.

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

We may establish separately funded companies for the development of product candidates using our systems biology approach in some areas outside the oncology field. These companies may not be successful in the development and commercialization of any product candidates.

We may apply our systems biology approach to disease areas outside the oncology field, and could do so through the establishment of separately funded companies. For example, we established Silver Creek to research and develop regenerative medicines to repair the heart using our systems biology approach. Silver Creek has received separate funding from investors other than us. To the extent we are not the majority owner of or control Silver Creek or other companies that we establish, Silver Creek or such other companies could take actions that we do not endorse or with which we disagree, such as using our systems biology approach in a way that reflects adversely on us. In addition, these companies may have difficulty raising additional funds and could encounter any of the risks in developing and commercializing product candidates to which we are subject.

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 radioactive and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We also store certain low level radioactive waste at our facilities until the materials can be properly disposed of. 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, use or disposal of biological, hazardous or radioactive materials.

In addition, we may be required to incur substantial costs to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Fluctuations in foreign currency exchange rates could substantially increase the costs of our clinical trial programs.

A significant portion of our clinical trial activities are conducted outside of the United States, and associated costs may be incurred in the local currency of the country in which the trial is being conducted, which costs could be subject to fluctuations in foreign exchange rates. At present, we do not engage in hedging transactions to protect against uncertainty in future exchange rates between particular foreign currencies and the U.S. dollar. A decline in the value of the U.S. dollar against currencies in geographies in which we conduct clinical trials could have a negative impact on our research and development costs. We cannot predict the impact of foreign currency fluctuations, and foreign currency fluctuations in the future may adversely affect our development costs.

Risks Related to Our Dependence on Third Parties

We may depend on collaborations with third parties for the development and commercialization of our product candidates. If those collaborations are not successful, we may not be able to capitalize on the market potential of these product candidates.

Depending on our capital requirements, development and commercialization costs, need for additional therapeutic expertise and other factors, it is possible that we will enter into additional development and commercialization arrangements with respect to either oncology product candidates or product candidates in other therapeutic areas.

Our likely collaborators for any distribution, marketing, licensing or broader collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. We will have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates. Our ability to generate revenues from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements.

Collaborations involving our product candidates pose the following risks to us:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in their strategic focus or available funding, or external factors such as an acquisition that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive;

- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to their marketing and distribution;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation;
- disputes may arise between us and the collaborators that result in the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management attention and resources; and
- collaborations may be terminated, such as the termination of our license and collaboration agreement with Sanofi effective December 17, 2014, and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. 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. If a present or future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program could be delayed, diminished or terminated.

For instance, Ipsen has agreed to use commercially reasonable efforts to develop ONIVYDE in connection with obtaining the regulatory approval by the FDA of ONIVYDE for certain indications. Although the results of this approval process may enable Ipsen to achieve the milestones necessary for us to receive the contingent payments under the asset sale agreement, there is no guarantee that Ipsen will take the steps set forth in the asset sale agreement and that such development will lead to the successful approval of ONIVYDE for such additional indications. Therefore, there can be no guarantees that any of the milestones set forth in the asset sale agreement will be achieved and that we will receive any future contingent payments.

Additionally, although the asset sale agreement entitles us to receive certain net milestone payments of up to $33.0 million under the Baxalta agreement, achievement of such milestones and payment of any or all of the $33.0 million is not guaranteed.

If we are not able to establish additional collaborations, we may have to alter our development plans.

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

We face significant competition in seeking appropriate collaborators. Collaborations are complex and time-consuming to negotiate and document. We may also be restricted under existing collaboration agreements from entering into agreements on certain terms with other potential collaborators. We may not be able to negotiate collaborations on acceptable terms, or at all. If that were to occur, we may have to curtail the development of a particular product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of our 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 will not be able to bring our product candidates to market and generate product revenue.

We rely on third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We do not independently conduct clinical trials of our product candidates. We rely on third parties, such as contract research organizations, clinical data management organizations, medical institutions and clinical investigators, to perform this function. Our reliance on these third parties for clinical development activities reduces our control over these activities but does not relieve us of our responsibilities. We remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA and other international regulatory agencies require us to comply with standards, commonly referred to as good clinical practices, for conducting, recording and reporting the results of clinical trials to assure that adverse event data are reported within required timeframes, that data and reported results are credible and accurate and that the rights, integrity and confidentiality of patients in clinical trials are protected. Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated

protocols, we will not be able to obtain, or may be delayed in obtaining, regulatory approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates.

We also rely on other third parties to store and distribute supplies for our clinical trials. Any performance failure on the part of our existing or future distributors could delay clinical development or regulatory approval of our product candidates or commercialization of our products or cause us to incur additional costs, producing additional losses and depriving us of potential product revenue.

We also intend to utilize diagnostics in several of our current and planned clinical trials, including current clinical trials of MM-121, MM-141 and MM-310, to preselect patients who will receive specified treatment regimens. We will rely on third-party laboratories to test patient samples in connection with such diagnostics. Any failure on the part of these laboratories to properly perform such testing could jeopardize those clinical trials and delay or prevent the approval of the associated therapeutic candidate.

Risks Related to the Manufacturing of Our Product Candidates

We expect to engage third parties for the production of our product candidates. This increases the risk that we will not have sufficient quantities of our product candidates at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We rely on third-party manufacturers for most of the aspects of the production of our product candidates, including the production of bulk drug substance and fill-finish and labeling activities. Reliance on third-party manufacturers entails risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third-party manufacturers may not be able to comply with current good manufacturing practices, or cGMP, or Quality System Regulation, or QSR, or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates.

For instance, in 2010, a former fill-finish third-party contractor that we used to fill and package MM-121 experienced FDA inspection issues with its quality control processes that resulted in a formal warning letter from the FDA. As a result, we pulled some MM-121 from clinical trial sites and replaced it with MM-121 that was filled by a different contractor. This restocking resulted in a few patients missing one or two doses of MM-121. It is possible that we could experience similar issues with other contractors.

Furthermore, our products may compete with the products of other companies for access to manufacturing facilities. Because there are a limited number of manufacturers that operate under cGMP or QSR regulations and that might be capable of manufacturing for us at an appropriate scale, we may not have access to such manufacturers.

In connection with the asset sale, we entered into a transition services agreement with Ipsen, pursuant to which we and Ipsen are providing certain services to each other for a period of 24 months, including Ipsen's agreement to manufacture MM-310 pursuant to a manufacturing services agreement being negotiated by us. Although we are negotiating arrangements with other third parties for our other product candidates, we do not currently have any agreements with third-party manufacturers for the clinical supply to us of any product candidates, and we may be unable to conclude such agreements or to do so on acceptable terms.

We currently rely on single suppliers for the resins, media and filters that we use for the manufacture of our product candidates. We purchase these materials from our suppliers on a purchase order basis and do not have long-term supply agreements in place. Any performance failure or refusal to supply on the part of our existing or future suppliers could delay clinical development, marketing approval or commercialization of our products. If our current suppliers cannot perform as agreed, we may be required to replace one or more of these suppliers. Although we believe that there may be a number of potential long-term replacements to each supplier, we may incur added costs and delays in identifying and qualifying any such replacements.

We likely will rely upon third-party manufacturers to provide us with necessary reagents and instruments to develop, test and manufacture our *in vitro* diagnostics. Currently, many reagents are marketed as Research Use Only products under FDA regulations.

Our dependence upon others for the manufacture of our product candidates may adversely affect our future profit margins and our ability to commercialize any products that receive regulatory approval on a timely and competitive basis.

Risks Related to Our Intellectual Property

If we fail to fulfill our obligations under our intellectual property licenses with third parties, we could lose license rights that are important to our business.

We are a party to a number of intellectual property license agreements with third parties, including with respect to MM-121, MM-141, MM-310, MM-302 and MM-151, and expect to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that our future license agreements will impose, various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, our licensors may have the right to terminate these agreements, in which event we might not be able to develop and market any product that is covered by these agreements. Termination of these licenses or reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms. The occurrence of such events could materially harm our business.

If we are unable to obtain and maintain patent protection for our technology and products, or if our licensors are unable to obtain and maintain patent protection for the technology or products that we license from them, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and products may be adversely affected.

Our success depends in large part on our and our licensors' ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary technology and products. In some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology or products that we license from third parties. Therefore, we cannot be certain that these patents and applications will be prosecuted and enforced in a manner consistent with the best interests of our business. In addition, if third parties who license patents to us fail to maintain such patents, or lose rights to those patents, the rights we have licensed may be reduced or eliminated.

We have sought to protect our proprietary position by filing patent applications in the United States and abroad related to our novel technologies and products that are important to our business. This 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. 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.

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. As a result, the issuance, scope, validity, enforceability and commercial value of our and our licensors' patent rights are highly uncertain. Our and our licensors' pending and future patent applications may not result in patents being issued that protect our technology or products or that effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. The laws of foreign countries may not protect our rights to the same extent as the laws of the United States. 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 be certain that we or our licensors were the first to make the inventions claimed in our owned and licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions. Assuming the other requirements for patentability are met, the first to file a patent application is entitled to the patent. Under the America Invents Act enacted in 2011, the United States moved to this first to file system in 2013 from the previous system under which the first to make the claimed invention was entitled to the patent. We may become involved in opposition, interference or derivation proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such proceeding could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights.

Even if our owned and licensed patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner. The issuance of a patent is not conclusive as to its 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. Such challenges may result in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop or prevent us from stopping others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new product

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 sufficient rights to exclude others from commercializing products similar or identical to ours.

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

Competitors may infringe our patents. To counter infringement or unauthorized use, we may be required to initiate infringement lawsuits, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly. 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.

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 products and product candidates and use our proprietary technologies without infringing the enforceable proprietary rights of third parties. We may become party to, or threatened with, future adversarial proceedings or litigation regarding intellectual property rights with respect to our products and technology, including interference or derivation proceedings before the U.S. Patent and Trademark Office. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future. 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 products 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 a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. We could be forced, including by court order, to cease commercializing the infringing technology or product. In addition, we could be found liable for monetary damages. A finding of infringement could prevent us from commercializing our product candidates or force us to cease some of our business operations, which could materially harm our business. Claims that we have misappropriated the confidential information or trade secrets of third parties can have a similar negative impact on our business.

We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

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

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. 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 our resources available for development 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 substantially greater financial resources. 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.

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

In addition to our patented technology and products, we rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect these trade secrets, in part, by entering into

non-disclosure and confidentiality agreements with parties that have access to them, such as our employees, corporate collaborators, outside scientific collaborators, sponsored researchers, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. In addition, any of these parties may breach the agreements and disclose our proprietary information, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. 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 from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

We may not be able to obtain, maintain or protect proprietary rights necessary for the continued development and commercialization of our products, product candidates and research technologies, including as a result of challenges from companies who seek to sell generic versions of our products after expiration of any orphan drug exclusivity but prior to the applicable patent expiration.

Our commercial success depends in large part on obtaining and maintaining U.S. and foreign patent protection for our products, our product candidates and our research technologies and successfully enforcing and defending these patents against third-party challenges, including with respect to generic challenges. The validity of our patents in one or more jurisdictions may be challenged by third parties, resulting in our patents being deemed invalid, unenforceable or narrowed in scope, which could compromise the scope or duration of our exclusive rights in the relevant product, product candidate or technology. For example, the validity of a U.S. patent can be challenged in the U.S. Patent and Trademark Office (e.g., through an Inter Partes Review and/or Post Grant Review Proceeding) and/or in U.S. federal district court.

In addition, our patents may also be challenged in a federal court in connection with a third party's abbreviated new drug application, or ANDA, or a Section 505(b)(2) new drug application, or NDA, seeking FDA approval to market a generic version of our products, resulting in a patent challenge to one or more patents listed in the Orange Book for our product. This patent challenge can result in one or more of those Orange Book patents for our products being deemed uninfringed, invalid, unenforceable and/or narrowed in scope, which could compromise the scope or duration of our exclusive rights in the relevant product. An ANDA or Section 505(b)(2) NDA can be filed at any time after FDA approval of a product. Other challenges to a patent may be mounted without regard to the date of an FDA approval.

Our patents as issued or as subsequently limited by any litigation might not contain claims that are sufficiently broad to prevent others from circumventing our patent protection and utilizing our technologies. For instance, the issued patents relating to our product candidates may be limited to a particular indication and/or composition and may not cover similar compositions that have similar clinical properties. Consequently, our competitors may independently develop competing products that do not infringe our patents or other intellectual property. Also, our pending patent applications may not issue, and we may not receive any additional patents. We cannot be sure that our patents and patent applications, including our own and those that we have rights to under licenses from third parties, will adequately protect our intellectual property for a number of reasons, including, among other things, the following: (i) the patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions; (ii) the actual protection afforded by a patent can vary from country to country and may depend upon the type of patent, the scope of its coverage and the availability of legal remedies in the country; (iii) the laws of foreign countries in which we market our products may afford little or no effective protection to our intellectual property, thereby easing our competitors' ability to compete with us in such countries; (iv) intellectual property laws and regulations and legal standards relating to the validity, scope and enforcement of patents covering pharmaceutical and biotechnological inventions are continually developing and changing, both in the United States and in other important markets outside the United States; (v) third parties may challenge, infringe, circumvent or seek to invalidate existing or future patents owned by or licensed to us; and (vi) the coverage claimed in a patent application can be significantly reduced before the patent is issued, and, as a consequence, our and our partners' patent applications may result in patents with narrower coverage than we desire or have planned for.

Risks Related to Regulatory Approval of Our Product Candidates

If we are not able to obtain required regulatory approvals, we will not be able to commercialize our product candidates, and our ability to generate revenue will be materially impaired.

Our product candidates, including our clinical stage product candidates, and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, import, export, sampling and marketing are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by comparable authorities in other countries. Failure to obtain regulatory approval for a product candidate will prevent us from commercializing the product candidate. ONIVYDE was our first and only

product candidate to receive regulatory approval, and so we have only limited experience in filing and supporting the applications necessary to gain regulatory approvals. Securing regulatory approval requires the submission of extensive preclinical and clinical data and supporting information to the FDA and other regulatory agencies for each therapeutic indication to establish the product candidate's safety and efficacy. Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the FDA or other regulatory agencies. Our product 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 regulatory approval or prevent or limit commercial use.

The process of obtaining regulatory approvals is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based on a variety of factors, including the type, complexity and novelty of the product candidates involved. Changes in regulatory approval policies during the development period, changes in or the enactment of additional statutes or regulations, changes in regulatory review for each submitted product application or approval of other products for the same indication may cause delays in the approval or rejection of an application. Regulatory agencies have substantial discretion in the approval process and may refuse to accept any application or may decide that our data is insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent regulatory approval of a product candidate. Any regulatory approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

If we pursue development of a diagnostic to identify patients who are likely to benefit from a therapeutic product, failure to obtain approval for the diagnostic may prevent or delay approval of the therapeutic product.

We are attempting to develop diagnostics to identify patients who are likely to benefit from our therapeutic product candidates. We currently rely on and expect to continue to rely on third parties for much of the development, testing and manufacturing of our diagnostics. We will likely rely on such third parties to also obtain any required regulatory approval for and then commercially supply such diagnostics. All of our diagnostic candidates are in preclinical or clinical development. We have very limited experience in the development of diagnostics and, even with the help of third parties with greater experience, may fail to obtain the required diagnostic product marketing approval, which could prevent or delay approval of the therapeutic product.

In July 2014, the FDA issued final guidance that stated that if safe and effective use of a therapeutic depends on an *in vitro* diagnostic, then the FDA generally will not approve the therapeutic unless the FDA approves or clears this "*in vitro* companion diagnostic device" at the same time that the FDA approves the therapeutic. The approval or clearance of the *in vitro* diagnostic most likely will occur through the FDA's Center for Devices and Radiological Health Office of In Vitro Diagnostics and Radiological Health. Even with the issuance of the final guidance, the FDA's expectations for *in vitro* companion diagnostics remain unclear in some respects. The FDA's developing expectations will affect our *in vitro* diagnostics. In particular, the FDA may limit our ability to use retrospective data, otherwise disagree with our approaches to trial design, biomarker qualification, clinical and analytical validity and clinical utility, or make us repeat aspects of the trial or initiate new trials.

Because our diagnostic candidates are at an early stage of development, we cannot yet know what the FDA will require for any of these tests. For several of our clinical stage product candidates, namely MM-121, MM-141 and MM-310, we are attempting to develop an *in vitro* diagnostic that will help identify patients likely to benefit from the therapy. Whether the FDA will consider these *in vitro* diagnostics to be "*in vitro* companion diagnostic devices" that require simultaneous approval or clearance with the therapeutics will depend on whether the FDA views the diagnostics to be essential to the safety and efficacy of these therapeutics.

Based on the FDA's past practice with companion diagnostics, if we are successful in developing a diagnostic for any of our clinical stage product candidates, we would expect that FDA approval of an *in vitro* companion diagnostic, or possibly an *in vivo* companion diagnostic, would be required for approval and subsequent commercialization of each such therapeutic product candidate. We are not aware of any currently available diagnostics that, if necessary, would otherwise allow us to proceed with the approval and subsequent commercialization of our product candidates despite a delay in or failure of our attempts to develop diagnostics.

Because we expect to rely on third parties for various aspects of the development, testing and manufacture, as well as for regulatory approval for and commercial supply, of our diagnostics, the commercial success of any of our product candidates that require a diagnostic will be tied to and dependent on the continued ability of such third parties to make the diagnostic commercially available on reasonable terms in the relevant geographies.

If we fail to maintain orphan drug designation for MM-141, we will have to rely on other rights and protections.

We obtained orphan drug designation in the United States for MM-141 for the treatment of pancreatic cancer. In the United States, under the Orphan Drug Act, the FDA may designate a product 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 in the United States.

In the United States, the company that first obtains FDA approval for a designated orphan drug for the specified rare disease or condition receives orphan drug marketing exclusivity for that drug for that indication for a period of seven years. This orphan drug exclusivity prevents the FDA from approving another application, including a full NDA, to market the same drug for the same orphan indication, except in limited circumstances. For purposes of small molecule drugs, the FDA defines the term "same drug" to mean a drug that contains the same active molecule and that is intended for the same use as the approved orphan drug. Orphan drug exclusivity may be lost if the FDA 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.

Even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product 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.

Our therapeutic product candidates for which we intend to seek approval as biological or drug products may face competition sooner than expected.

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, as part of the Health Care and Education Reconciliation Act of 2010, or the Health Care Reform Laws, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on their similarity to existing brand product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until twelve years after the original branded product was approved under a biologics license application, or BLA. The BPCIA is complex and has yet to be fully interpreted and implemented by the FDA. As a result, its ultimate impact, implementation and meaning is subject to uncertainty. While it is uncertain when any such processes may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that any of our products approved as a biological product under a BLA should qualify for the twelve year period of exclusivity. However:

- a potential competitor could seek and obtain approval of its own BLA during our exclusivity period instead of seeking approval of a biosimilar version; and
- the FDA could consider a particular product candidate which contains both drug and biological product components to be a drug subject to review pursuant to an NDA, and therefore eligible for a significantly shorter marketing exclusivity period as provided under the Drug Price Competition and Patent Term Restoration Act of 1984.

Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear and will depend on a number of marketplace and regulatory factors that are still developing.

In addition, a drug product approved under an NDA could face generic competition earlier than expected. The enactment of the Generic Drug User Fee Amendments of 2012 as part of the Food and Drug Administration Safety and Innovation Act of 2012, or FDASIA, established a user fee program that will generate hundreds of millions of dollars in funding for the FDA's generic drug review program. Funding from the user fee program, along with performance goals that the FDA negotiated with the generic drug industry, is significantly decreasing the timeframe for FDA review and approval of generic drug applications.

Failure to obtain regulatory approval in international jurisdictions would prevent us from marketing our products abroad.

We intend to market any product for which we obtain marketing approval, either ourselves or with commercialization partners, both within and outside the United States. This may increase the risks described below with respect to our compliance with foreign regulations.

In order to market and sell any approved products in the European Union and many other jurisdictions, we or our commercialization partners must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing, including sometimes additional testing in children. The time required to obtain approval in foreign countries may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be sold in that country. We or our future commercialization partners may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory

authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We or our future commercialization partners may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market.

Any product for which we obtain marketing approval could be subject to restrictions or withdrawal from the market and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Any product for which we may obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP or QSR requirements relating to quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping. Even if regulatory approval of a product is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Later discovery of previously unknown problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in actions such as:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the marketing of a product;
- restrictions on product distribution;
- requirements to conduct post-marketing clinical trials;
- warning or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenue;
- suspension or withdrawal of regulatory approvals;
- refusal to permit the import or export of our products;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

The FDASIA provides the FDA with new inspection authorities. A drug or biologic will be considered adulterated, with possible resulting civil and criminal penalties, if the owner or operator of the establishment where it is made, processed, packed or held delays, denies, limits or refuses inspection. The FDASIA also replaces the biennial inspection schedule for drugs and biologics with a risk-based inspection schedule. The law grants the FDA authority to require a drug or biologics manufacturer to provide, in advance or instead of an inspection, and at the manufacturer's expense, any records or other information that the agency may otherwise inspect at the facility. The FDASIA also permits the FDA to share inspection information with foreign governments under certain circumstances. The FDASIA is complex and has yet to be fully interpreted and implemented by the FDA. As a result, its ultimate impact, implementation and meaning are subject to uncertainty.

The FDASIA also provides the FDA with additional authority to exercise against manufacturers of drugs or biologics that are not adhering to pediatric study requirements, which apply even if the manufacturer is not seeking to market the drug or biologic to pediatric patients. As of April 2013, the FDA must issue non-compliance letters to companies who do not meet the pediatric study requirements. Any company receiving a non-compliance letter would have an opportunity to respond, and the non-compliance letter and company response would become publicly available.

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

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

For example, in March 2010, President Obama signed into law the Health Care Reform Laws, which were intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, provide benefits for patients within a coverage gap in the Medicare Part D prescription drug program, implement rules regarding prescription drug benefits under the health insurance exchanges and changes to the Medicare Drug Rebate program, expand the Public Health Service's, or PHS', 340B drug pricing program, enhance remedies against fraud and abuse, add new transparency requirements for healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. These changes impact existing government healthcare programs and are resulting in the development of new programs, including Medicare payment for performance initiatives and improvements to the physician quality reporting system and feedback program. Further, the Health Care Reform Laws impose a significant annual fee on companies that manufacture or import branded prescription drug products. Substantial new provisions affecting compliance have also been enacted, which may affect our business practices with healthcare practitioners.

Some states have elected not to expand their Medicaid programs by raising the income limit to 133% of the federal poverty level, as is permitted under the Health Care Reform Laws. For each state that does not choose to expand its Medicaid program, there may be fewer insured patients overall, which could impact our sales of any approved products, business and financial condition. Where Medicaid patients receive insurance coverage under any of the new options made available through the Health Care Reform Laws, the possibility exists that manufacturers may be required to pay Medicaid rebates on drugs used under these circumstances, a decision that could impact manufacturer revenues. In addition, the federal government has also announced delays in the implementation of key provisions of the Health Care Reform Laws, including the employer mandate. The implications of these delays for our sales of any approved products, business and financial condition, if any, are not yet clear.

The Health Care Reform Laws appear likely to continue the pressure on pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs. Moreover, legislative changes to the Health Care Reform Laws remain possible. We expect that the Health Care Reform Laws, as currently enacted or as it may be amended in the future, and other healthcare reform measures that may be adopted in the future, could have a material adverse effect on our industry generally and on our ability to successfully commercialize our product candidates.

If we fail to comply with our reporting and payment obligations under U.S. governmental pricing programs, we could be required to reimburse government programs for underpayments and could pay penalties, sanctions and fines which could have a material adverse effect on our business, financial condition and results of operations.

As a condition of reimbursement for any product approved by the FDA, various U.S. federal and state healthcare programs require that we calculate and report certain pricing information to U.S. federal and state healthcare agencies. For example, we are required to provide average selling price information to CMS on a quarterly basis in order to compute Medicare Part B payment rates. Price reporting and payment obligations are highly complex and vary among products and programs. The calculation of average selling price includes a number of inputs from contracts with wholesalers, specialty distributors, group purchasing organizations and other customers. Manufacturers are also required to make an assessment of whether these agreements are deemed to be for bona fide services and that the services are deemed to be at fair market value in our industry and for our products. Our processes for estimating amounts due under these governmental pricing programs involve subjective decisions. As a result, our price reporting calculations are subject to the risk of errors and our methodologies for calculating these prices could be challenged under the federal False Claims Act or other laws. In addition, the Health Care Reform Laws modified the rules related to certain price reports and expanded the scope of pharmaceutical product sales to which Medicaid rebates apply, among other things. Uncertainty exists currently, as many of the specific determinations necessary to implement this new legislation have yet to be decided and communicated to industry participants. This uncertainty in the interpretation of the legislation increases the chances of an error in price reporting, which could in turn lead to a legal challenge, restatement or investigation. If we become subject to investigations, restatements or other inquiries concerning our compliance with price reporting laws and regulations, we could be required to pay or be subject to additional reimbursements, penalties, sanctions or fines, which could have a material adverse effect on our business, financial condition and results of operations.

We participate in and have certain price reporting obligations to the Medicaid Drug Rebate program and other governmental pricing programs, and we have obligations to report average sales price under the Medicare program. Pricing and rebate calculations vary among products and programs. The calculations are complex and are often subject to interpretation by governmental or regulatory agencies and the courts. For example, the Medicaid rebate amount is computed each quarter based on our submission to the

CMS of our average manufacturer price, or AMP, and best price for the quarter. If we become aware that our reporting for prior quarters was incorrect, or has changed as a result of recalculation of the pricing data, we will be obligated to resubmit the corrected data for a period not to exceed twelve quarters from the quarter in which the data originally were due. Such restatements and recalculations would serve to increase our costs for complying with the laws and regulations governing the Medicaid rebate program. Any corrections to our rebate calculations could result in an overage or underage in our rebate liability for past quarters, depending on the nature of the correction. Price recalculations also may affect the price that we will be required to charge certain safety net providers under the PHS 340B drug pricing program.

We are liable for errors associated with our submission of pricing data and for overcharging government payers. For example, in addition to retroactive rebates and the potential for 340B program refunds, if we are found to have knowingly submitted false AMP or best price information to the government, we may be liable for civil monetary penalties in the amount of $100,000 per item of false information. Our failure to submit monthly/quarterly AMP and best price data on a timely basis could result in a civil monetary penalty of $10,000 per day for each day the submission is late beyond the due date. In the event that CMS were to terminate our rebate agreement, no federal payments would be available under Medicaid or Medicare Part B for our products. In addition, if we overcharge the government in connection with our Federal Supply Schedule, or FSS, contract or under any other government program, we will be required to refund the difference to the government. Failure to make necessary disclosures and/or to identify contract overcharges could result in allegations against us under the federal civil False Claims Act and other laws and regulations.

CMS and the Office of Inspector General of the U.S. Department of Health and Human Services have pursued manufacturers that were alleged to have failed to report these data to the government in a timely manner. Governmental agencies may also make changes in program interpretations, requirements or conditions of participation, some of which may have implications for amounts previously estimated or paid. We cannot assure you that our submissions will not be found by CMS to be incomplete or incorrect.

If we overcharge the government in connection with our FSS contract or the Tricare retail pharmacy program, whether due to a misstated Federal Ceiling Price or otherwise, we would be required to refund the difference to the government. Failure to make necessary disclosures and/or to identify contract overcharges can result in allegations against us under the False Claims Act and other laws and regulations.

Unexpected refunds to the federal government, and responding to a government investigation or enforcement action, would be expensive and time-consuming, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Risks Related to Commercialization of Our Product Candidates

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products. If we are found to have improperly promoted off-label uses while we marketed ONIVYDE, we may become subject to significant fines and other liability.

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the product's approved labeling. If we are found to have promoted for off-label uses, we may become subject to significant government fines and other related liability. For example, the U.S. government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The government has also required companies to enter into complex multi-year corporate integrity agreements and/or non-prosecution agreements that can impose significant restrictions and other burdens on the affected companies.

In addition, incentives under applicable U.S. laws encourage employees and physicians to report violations of rules governing promotional activities for pharmaceutical products. These incentives could lead to so called whistleblower lawsuits as part of which such persons seek to collect a portion of moneys allegedly overbilled to government agencies due to, for example, promotion of pharmaceutical products beyond labeled claims. Such lawsuits, whether with or without merit, are typically time consuming and costly to defend. Such suits may also result in related stockholder lawsuits, which are also costly to defend.

Our relationships with customers and 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, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers, physicians and others play a primary role in the recommendation and prescription of products for which we obtain marketing approval. 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 any products for which we obtain marketing approval. Restrictions under applicable federal, state and foreign healthcare laws and regulations include the following:

- the federal healthcare anti-kickback statute prohibits, among other things, knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward the purchasing, leasing, ordering or arranging for the purchase, order or recommendation of any item or service reimbursable under Medicare, Medicaid, or other federal healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other, and violations are punishable by imprisonment, criminal fines, civil monetary penalties and exclusion from participation in federal healthcare programs. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor;
- the federal False Claims Act prohibits any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. Government enforcement agencies and private whistleblowers have initiated investigations or brought private lawsuits against pharmaceutical companies for a variety of allegedly improper promotional or marketing activities, such as allegedly inflating drug prices they report to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates; allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product; or engaging in promotion for "off-label" uses. Additionally, the Health Care Reform Laws amended the federal False Claims Act such that a violation of the federal anti-kickback statute can serve as a basis for liability under the False Claims Act;
- the federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, or HIPAA, makes it a crime to knowingly and willfully execute or attempt to execute a scheme to defraud any healthcare benefit program and also imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal false statements statute prohibits, among other things, 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;
- the federal transparency requirements under the Health Care Reform Laws require manufacturers of drugs, devices, biologics and medical supplies reimbursable under Medicare and Medicaid to report to the Department of Health and Human Services information related to payments and other transfers of value to physicians and teaching hospitals, as well as physician ownership and investment interests, and provide for public reporting of the data reported by manufacturers;
- the U.S. Foreign Corrupt Practices Act prohibits U.S. companies and their representatives from paying, offering to pay, promising or authorizing the payment of anything of value to any foreign government official, government staff member, political party or political candidate for the purpose of obtaining or retaining business or to otherwise obtain favorable treatment or influence a person working in an official capacity, and encompasses many healthcare professionals in many countries under the definition of a foreign government official;
- the Bribery Act, which applies to U.S. companies such as ourselves that conduct business in the United Kingdom, proscribes giving and receiving bribes in the public and private sectors, bribing a foreign public official and failing to have adequate procedures to prevent employees and other agents from giving bribes; and
- analogous state laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers. In addition, 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. Other states require pharmaceutical manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures, or prohibit certain marketing-related activities including the provision of gifts, meals or other items to certain healthcare providers.

Efforts to ensure that our business arrangements with third parties comply with applicable healthcare laws and regulations involve substantial costs. It is possible that governmental authorities will conclude that our business practices may 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 are 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 do business are 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. Even if we are not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could also harm our financial condition. Responding to government investigations or whistleblower lawsuits, defending any claims raised, and any resulting fines, damages, penalties, settlement payments or administrative actions, as well as any related actions brought by stockholders or other third parties, could have a material impact on our reputation, business and financial condition and divert the attention of our management from operating our business.

Our corporate compliance efforts cannot guarantee that we are in compliance with all potentially applicable regulations.

The development, manufacturing, pricing, sales, coverage and reimbursement of our products, together with our general operations, are and will be subject to extensive regulation by federal, state and other authorities within the United States and numerous entities outside of the United States. While we have implemented a corporate compliance program based on what we believe are the current best practices, we cannot provide any assurance that governmental authorities will find that our business practices comply with current or future administrative or judicial interpretations of potentially applicable laws and regulations. If we fail to comply with any of these laws and regulations, we could be subject to a range of regulatory actions, including suspension or termination of clinical trials, the failure to approve a product candidate, restrictions on our products or manufacturing processes, withdrawal of products from the market, significant fines, disqualification or debarment from participation in federally-funded healthcare programs or other sanctions or litigation, any of which events may have a significant adverse impact on our business.

Risks Related to Data Protection and Cybersecurity

Our failure to comply with data protection laws and regulations could lead to government enforcement actions, private litigation and/or adverse publicity and could negatively affect our operating results and business.

We are subject to data protection laws and regulations that address privacy and data security. The legislative and regulatory landscape for data protection continues to evolve, and in recent years there has been an increasing focus on privacy and data security issues. In the United States, numerous federal and state laws and regulations, including state data breach notification laws, state health information privacy laws and federal and state consumer protection laws govern the collection, use, disclosure and protection of health-related and other personal information. Failure to comply with data protection laws and regulations could result in government enforcement actions, which could include civil or criminal penalties, private litigation and/or adverse publicity and could negatively affect our operating results and business. In addition, we may obtain health information from third parties (e.g., healthcare providers who prescribe our products) that are subject to privacy and security requirements under HIPAA. We could be subject to criminal penalties if we knowingly obtain or disclose individually identifiable health information in a manner that is not authorized or permitted.

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

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. In the ordinary course of business, we collect, store and transmit large amounts of confidential information (including, among other things, trade secrets or other intellectual property, proprietary business information and personal information). It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We also have outsourced elements of our operations to third parties, and as a result we manage a number of third-party vendors who may or could have access to our confidential information. The size and complexity of our information technology systems, and those of third-party vendors with whom we contract, and the large amounts of confidential information stored on those systems, make such systems vulnerable to service interruptions or to security breaches from inadvertent or intentional actions by our employees, third-party vendors, and/or business partners, or from cyber-attacks by malicious third parties. Cyber-attacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyber-attacks could include the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information.

Significant disruptions of our information technology systems, or those of our third-party vendors, or security breaches could adversely affect our business operations and/or result in the loss, misappropriation and/or unauthorized access, use or disclosure of, or

the prevention of access to, confidential information, including, among other things, trade secrets or other intellectual property, proprietary business information and personal information, and could result in financial, legal, business and reputational harm to us. For example, any such event that leads to unauthorized access, use or disclosure of personal information, including personal information regarding our patients or employees, could harm our reputation, require us to comply with federal and/or state breach notification laws and foreign law equivalents, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information. Security breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. While we have implemented security measures to protect our information technology systems and infrastructure, there can be no assurance that such measures will prevent service interruptions or security breaches that could adversely affect our business.

Risks Related to Employee Matters and Managing Growth

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

We are highly dependent on the principal members of our executive and scientific teams. Although we have formal employment agreements with each of our executive officers, these agreements do not prevent our executives from terminating their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other employees. The loss of the services of any of these persons could impede the achievement of our research, development and commercialization objectives.

Recruiting and retaining qualified scientific, clinical, manufacturing and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these 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. 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.

Our corporate restructuring and the associated headcount reductions announced in October 2016 and January 2017 may not result in anticipated savings, could result in total costs and expenses and attrition that are greater than expected and could disrupt our business.

On October 3, 2016, we announced a 22% reduction in headcount as part of a major corporate restructuring with the objective of prioritizing our research and development on a focused set of systems biology-derived oncology products and strengthening our financial runway. Additionally, on January 8, 2017, we announced a further planned reduction in headcount in connection with the closing of the asset sale to Ipsen and the completion of our strategic pipeline review. We may not realize, in full or in part, the anticipated benefits, savings and improvements in our cost structure from our restructuring efforts due to unforeseen difficulties, delays or unexpected costs. If we are unable to realize the expected operational efficiencies and cost savings from the restructuring, our operating results and financial condition would be adversely affected. We also cannot guarantee that we will not have to undertake additional headcount reductions or restructuring activities in the future. Furthermore, our restructuring plan may be disruptive to our operations. For example, our headcount reductions could yield unanticipated consequences, such as attrition beyond planned staff reductions, or increase difficulties in our day-to-day operations. Our headcount reductions could also harm our ability to attract and retain qualified management, scientific, clinical, manufacturing and sales and marketing personnel who are critical to our business. Any failure to attract or retain qualified personnel could prevent us from successfully developing and commercializing our product candidates in the future.

We have entered into and may continue to enter into or seek to enter into business combinations, acquisitions or divestitures which may be difficult to consummate, disrupt our business, divert management attention or dilute stockholder value.

As part of our business strategy, we may enter into business combinations, acquisitions or divestitures. Although we acquired Hermes in October 2009 and consummated the asset sale to Ipsen in April 2017, we have limited experience in making acquisitions and divestitures. In addition, acquisitions and divestitures are typically accompanied by a number of risks, including:

- the difficulty of integrating or separating the operations and personnel of the acquired companies or divested product;
- the potential disruption of our ongoing business and distraction of management;
- potential unknown liabilities and expenses;
- the failure to achieve the expected benefits of the combination, acquisition or divestiture;

- the maintenance of acceptable standards, controls, procedures and policies; and
- the impairment of relationships with employees as a result of any integration or separation of management and other personnel.

If we are not successful in completing acquisitions or divestitures that we may pursue in the future, we would be required to reevaluate our business strategy and we may have incurred substantial expenses and devoted significant management time and resources in seeking to complete the acquisitions or divestitures. In addition, with future acquisitions, we could use substantial portions of our available cash as all or a portion of the purchase price. As we did for the acquisition of Hermes, we could also issue additional securities as consideration for these acquisitions, which could cause our stockholders to suffer significant dilution.

Risks Related to Our Common Stock

Our executive officers, directors and principal stockholders maintain the ability to significantly influence all matters submitted to stockholders for approval.

Our executive officers, directors and stockholders who own more than 5% of our outstanding common stock, in the aggregate, beneficially own a large portion of our capital stock. As a result, if these stockholders were to choose to act together, they would be able to significantly influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would significantly influence the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets. This concentration of voting power could allow, delay or prevent an acquisition of our company on terms that other stockholders may desire.

Provisions in our corporate 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 corporate charter and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. 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. Because our board of directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. Among others, these provisions:

- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- establish advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and nominations to our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call stockholder meetings;
- authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a “poison pill” that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and
- require the approval of the holders of at least 75% of the votes that all our stockholders would be entitled to cast to amend or repeal certain provisions of our charter or bylaws.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Further, the repurchase right under the convertible notes in connection with a fundamental change (as defined therein) and any increase in the conversion rate in connection with a make-whole fundamental change could also discourage a potential acquirer.

Our stock price has been and may in the future be volatile, which could cause holders of our common stock to incur substantial losses.

Our stock price has been and in the future may be subject to substantial price volatility. The stock market in general and the market for biotechnology companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, our stockholders could incur substantial losses. The market price for our common stock may be influenced by many factors, including:

- the success of competitive products or technologies;
- results of clinical trials of our product candidates or those of our competitors;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patents or other proprietary rights;
- the recruitment or departure of key personnel;
- 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 and issuance of new or changed securities analysts' reports or recommendations;
- activism by any single large stockholder or combination of stockholders;
- general economic, industry and market conditions; and
- the other factors described in this "Risk Factors" section.

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

We have not historically declared or paid cash dividends on our common stock. Although our board of directors declared a special cash dividend of $140.0 million payable on May 26, 2017 to stockholders of record as of the close of business on May 17, 2017, we do not currently intend to pay any regular cash dividends in the foreseeable future. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, with the exception of the anticipated special cash dividend, capital appreciation of our common stock, if any, will be the sole source of gain for holders of our common stock for the foreseeable future.

Future sales of shares of our common stock, including by us or our directors and executive officers or shares issued upon the exercise of currently outstanding options, or upon conversion of our outstanding convertible notes, could cause the market price of our common stock to drop significantly, even if our business is doing well.

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. In addition, we have a significant number of shares that are subject to outstanding options, and we may issue shares of our common stock upon conversion of our outstanding convertible notes. The exercise of these options or the issuance of shares of our common stock upon conversion of our outstanding convertible notes and the subsequent sale of the underlying common stock could cause a further decline in our stock price. For instance, in April 2016, we issued an aggregate of 12,367,663 shares of our common stock to certain holders of our convertible notes who had agreed to convert an aggregate of $64.2 million of convertible notes. 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. 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.

Item 6. Exhibits.

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

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

MERRIMACK PHARMACEUTICALS, INC.

Date: May 10, 2017

By: /s/ Yasir B. Al-Wakeel
Yasir B. Al-Wakeel
Chief Financial Officer
(Principal Financial Officer)

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
2.1	Asset Purchase and Sale Agreement, dated as of January 7, 2017, by and between the Registrant and Ipsen S.A. (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed on January 9, 2017)
4.1	First Amendment to Loan and Security Agreement, dated as of February 23, 2017, by and between the Registrant and BioPharma Credit Investments IV Sub, LP (incorporated by reference to Exhibit 4.6 to the Registrant's Annual Report on Form 10-K filed on March 1, 2017)
10.1	Employment Agreement, dated as of January 17, 2017, by and between the Registrant and Richard Peters (incorporated by reference to Exhibit 10.6 to the Registrant's Annual Report on Form 10-K filed on March 1, 2017)
10.2*	Separation and Release of Claims Agreement, dated as of April 11, 2017, by and between the Registrant and Peter N. Laivins
10.3*	Separation and Release of Claims Agreement, dated as of April 11, 2017, by and between the Registrant and William M. McClements
10.4*	Separation and Release of Claims Agreement, dated as of April 11, 2017, by and between the Registrant and Edward J. Stewart
10.5*	Separation and Release of Claims Agreement, dated as of April 14, 2017, by and between the Registrant and William A. Sullivan
10.6*	Retention Bonus Agreement, dated as of April 3, 2017, by and between the Registrant and Yasir B. Al-Wakeel
10.7*	Retention Bonus Agreement, dated as of April 3, 2017, by and between the Registrant and Jeffrey A. Munsie
10.8*	Fifth Amendment of Lease, dated as of April 3, 2017, by and between the Registrant and ARE-MA Region No. 59, LLC
10.9*	Sublease Agreement, dated as of April 3, 2017, by and between the Registrant and Ipsen Bioscience, Inc.
10.10	Amendment No. 8 to Sublease, dated as of January 1, 2017, by and between Silver Creek Pharmaceuticals, Inc. and FibroGen, Inc. (incorporated by reference to Exhibit 10.21 to the Registrant's Annual Report on Form 10-K filed on March 1, 2017)
31.1*	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as 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 Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1+	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2+	Certification of Principal Financial Officer pursuant to 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 Database
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

\+ Furnished herewith.

SEPARATION AND RELEASE OF CLAIMS AGREEMENT

This Separation and Release of Claims Agreement (the "Agreement") is made as of the Effective Date (as defined below) between Merrimack Pharmaceuticals, Inc. (the "Company") and Peter N. Laivins ("Executive") (together, the "Parties").

WHEREAS, the Company and Executive are parties to the Employment Agreement dated as of February 24, 2015 (the "Employment Agreement"), under which Executive currently serves as Head of Development;

WHEREAS, the Parties wish to establish terms for Executive's orderly transition and separation from the Company effective on the Separation Date (as defined below); and

WHEREAS, the Parties agree that the payments, benefits and rights set forth in this Agreement shall be the exclusive payments, benefits and rights due Executive;

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

1. **Separation Date** – Executive's effective date of separation from employment with the Company will be April 3, 2017 (the "Separation Date"). Executive hereby resigns, as of the Separation Date, from his employment with the Company and as an officer of the Company. Executive agrees to execute and deliver any documents reasonably necessary to effectuate such resignations, provided that nothing in any such document is inconsistent with any terms set forth in this Agreement. As of the Separation Date, all salary payments from the Company will cease and any benefits Executive had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law or as otherwise specifically set forth in this Agreement.

2. **Severance Benefits** – In return for Executive's timely signing and not revoking this Agreement, and subject to Executive's compliance with all terms hereof, the Company will provide Executive with the following severance benefits in full satisfaction of the Company's obligations under the Employment Agreement (the "Severance Benefits"):

   (a) Salary Continuation – Commencing on the first regularly scheduled payroll date that follows the sixtieth (60th) day after the Separation Date (the "Payment Commencement Date"), the Company will, for a twelve (12) month period (the "Severance Period"), provide Executive with severance pay in the form of salary continuation payments at Executive's current annual base salary rate of $333,704, less all applicable taxes and withholdings and in accordance with the Company's regular payroll practices.

   (b) Group Health Insurance – Should Executive be eligible for and timely elect to continue receiving group health and/or dental insurance coverage under the law known as COBRA, the Company shall, until earlier of (x) the last day of the Severance Period, and (y) the date that Executive is no longer eligible for COBRA continuation coverage (the

"COBRA Contribution Period"), pay on Executive's behalf the share of the premium for such coverage that it currently pays on behalf of active and similarly situated employees who receive the same type of coverage. The remaining balance of any premium costs, and all premium costs after the COBRA Contribution Period, shall be paid by Executive on a monthly basis during the elected period of health insurance coverage under COBRA for as long as, and to the extent that, he remains eligible for COBRA continuation.

(c) 2016 Bonus – On the first regularly scheduled payroll date after the Separation Date, the Company shall provide Executive with a 2016 bonus payment of $116,796, less all applicable taxes and withholdings.

(d) 2017 Pro-Rata Bonus – On the Payment Commencement Date, the Company shall provide Executive with a 2017 pro-rata bonus payment of $27,395.17, less all applicable taxes and withholdings, which is equivalent to (i) the average of Executive's annual bonus payments over each of the three (3) years prior to the Separation Date, multiplied by (ii) a fraction, the numerator of which is the number of days during calendar year 2017 during which Executive remained employed by the Company and the denominator of which is 365.

(e) Other Benefits Continuation – During the Severance Period, the Company shall, to the extent allowed by applicable law and the applicable plan documents, continue to provide Executive with such other benefits as are described in Section 4(f) of the Employment Agreement, subject to and on a basis consistent with the terms, conditions and overall administration of such plans.

Other than the Severance Benefits, Executive will not be eligible for, nor shall he have a right to receive, any payments or benefits from the Company following the Separation Date, other than reimbursement for any outstanding business expenses in accordance with Company policy.

3. **Release of Claims** – In exchange for the consideration set forth in this Agreement, which Executive acknowledges he would not otherwise be entitled to receive, Executive hereby fully, forever, irrevocably and unconditionally releases, remises and discharges the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that Executive ever had or now has against any or all of the Released Parties up to the date on which he signs this Agreement, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to Executive's employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act, the Americans With Disabilities Act, the Age Discrimination in Employment Act, the Genetic Information Nondiscrimination Act, the Family and

Medical Leave Act, the Worker Adjustment and Retraining Notification Act, the Rehabilitation Act, Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, and the Employee Retirement Income Security Act, all as amended; all claims arising out of the Massachusetts Fair Employment Practices Act, Mass. Gen. Laws ch. 151B, § 1 et seq., the Massachusetts Wage Act, Mass. Gen. Laws ch. 149, § 148 et seq. (Massachusetts law regarding payment of wages and overtime), the Massachusetts Civil Rights Act, Mass. Gen. Laws ch. 12, §§ 11H and 11I, the Massachusetts Equal Rights Act, Mass. Gen. Laws. ch. 93, § 102 and Mass. Gen. Laws ch. 214, § 1C, the Massachusetts Labor and Industries Act, Mass. Gen. Laws ch. 149, § 1 et seq., Mass. Gen. Laws ch. 214, § 1B (Massachusetts right of privacy law), the Massachusetts Maternity Leave Act, Mass. Gen. Laws ch. 149, § 105D, and the Massachusetts Small Necessities Leave Act, Mass. Gen. Laws ch. 149, § 52D, all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or related to the Employment Agreement); all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of Executive's employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; *provided, however, that nothing in this release of claims prevents Executive from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that Executive acknowledges that he may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and Executive further waives any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding). This release also does not prevent Executive from reporting possible violations of federal securities laws to government enforcement agencies without notice to the Company, or from receiving any applicable award for information provided to such government enforcement agencies.* Further, nothing herein shall prevent Executive from bringing claims to enforce this Agreement, or release (i) any rights Executive may have under the Company's certificate of incorporation, by-laws, insurance and/or any indemnification agreement between him and the Company (and/or otherwise under law) for indemnification and/or defense as an employee, officer or director of the Company for his service to the Company (recognizing that such indemnification and/or defense is not guaranteed by this Agreement and shall be governed by the instrument or law, if any, providing for such indemnification and/or defense), (ii) any rights Executive may have to vested equity ownership in the Company under the applicable equity plans and agreements, (iii) any rights Executive may have to vested pension or 401(K) benefits or interests under any ERISA-Covered benefit plan (excluding severance) provided by the Company, (iv) any rights to COBRA or Workers' Compensation Benefits, or (v) any rights or claims that cannot be waived by law, including claims for unemployment benefits, which the Company agrees that it will not contest, provided that the Company will not make any false statement to any government agency.

4. **Continuing Obligations** – Executive acknowledges and reaffirms his obligation, to the extent permitted by law and except as otherwise permitted by Section 8 below, to keep

confidential and not to use or disclose any and all non-public information concerning the Company that he acquired during the course of his employment with the Company, including, but not limited to, any non-public information concerning the Company's business affairs, business prospects, and financial condition. Executive further acknowledges his continuing obligations with respect to confidential information, non-competition, non-solicitation, non-disclosure and developments as set forth in Sections 6-8 of the Employment Agreement and in the Non-Disclosure, Developments Non-Competition and Non-Solicitation Agreement dated as of February 24, 2015 (the "Restrictive Covenant Agreement") (except to the extent modified by Section 14 of the Employment Agreement), which survive his separation from employment with the Company, provided, however, the Company agrees to waive Section 4(f) of the Restrictive Covenant Agreement.

5. **Non-Disparagement** – Executive understands and agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, he will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition. The Company will instruct its board members and executive officers, to the extent permitted by law and except as otherwise permitted by Section 8 below, not to make any false, disparaging, derogatory or defamatory statements to third parties about Executive.

6. **Return of Company Property** – Executive confirms that he will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, wireless handheld devices, cellular phones, tablets, etc.), Company identification and any other Company-owned property in his possession or control and that he will leave intact all electronic Company documents, including, but not limited to, those that he developed or helped to develop during his employment. Executive further agrees that he will cancel all accounts for his benefit, if any, in the Company's name, including, but not limited to, credit cards, telephone charge cards, cellular phone and/or wireless data accounts and computer accounts.

7. **Confidentiality** – Executive understands and agree that, to the extent permitted by law and except as otherwise permitted by Section 8 below, the terms and contents of this Agreement, and the contents of the negotiations and discussions resulting in this Agreement, shall be maintained as confidential by Executive and his agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company, except as required by law, and except to his immediate family, legal, financial and tax advisors, on the condition that any individuals informed must hold the above information in strict confidence. The Company agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, it shall keep the contents of the negotiations and discussions resulting in this Agreement confidential except as it believes in good faith to be reasonably necessary for a legitimate business purpose.

8. **Scope of Disclosure Restrictions** – Nothing in this Agreement prohibits Executive or any other person from communicating with government agencies about possible violations of federal, state or local laws or otherwise providing information to government agencies or participating in government agency investigations or proceedings. Executive is not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information Executive obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding Executive's confidentiality and nondisclosure obligations, Executive is hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

9. **Cooperation** – Executive agrees that, to the extent permitted by law, he shall, for one (1) year following the Separation Date, reasonably cooperate with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. Executive's reasonable cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable times and locations designated by the Company, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. The Company will reimburse Executive for all reasonable and documented out of pocket costs that he incurs to comply with this paragraph. Executive further agrees that, to the extent permitted by law, he will notify the Company promptly in the event that he is served with a subpoena (other than a subpoena issued by a government agency), or in the event that he is asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

10. **Final Compensation** – Executive acknowledges that he has received all compensation due to him from the Company, including, but not limited to, all wages, bonuses and accrued, unused vacation time, and that he is not eligible or entitled to receive any additional payments or consideration from the Company beyond that provided for in Section 2 of this Agreement.

11. **Amendment and Waiver** – This Agreement shall be binding upon the Parties and may not be modified in any manner, except by an instrument in writing of concurrent or

subsequent date signed by duly authorized representatives of the Parties. This Agreement is binding upon and shall inure to the benefit of the Parties and their respective agents, assigns, heirs, executors/administrators/personal representatives, and successors. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

12. **Validity** – Should any provision of this Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Agreement.

13. **Nature of Agreement –** Both Parties understand and agree that this Agreement is a separation agreement and does not constitute an admission of liability or wrongdoing on the part of the Company or Executive.

14. **Time for Consideration and Revocation –** Executive acknowledges that he was initially presented with this Agreement on January 25, 2017. Executive understands that this Agreement shall be of no force or effect, and that he shall not be eligible for the consideration described herein, unless he signs and returns this Agreement on the Separation Date, and does not revoke his acceptance in the subsequent seven (7) day period (the day immediately following expiration of such revocation period, the "Effective Date").

15. **Acknowledgments –** Executive acknowledges that he has been given at least forty-five (45) days to consider this Agreement, and that the Company is hereby advising him to consult with an attorney of his own choosing prior to signing this Agreement. Executive further acknowledges and agrees that any changes made to this Agreement following his initial receipt of this Agreement, whether material or immaterial, did not re-start or affect in any manner the original forty-five (45) day consideration period. Executive understands that he may revoke this Agreement for a period of seven (7) days after he signs it by notifying the Company in writing, and this Agreement shall not be effective or enforceable until the expiration of this seven (7) day revocation period. Executive understands and agrees that by entering into this Agreement he will be waiving any and all rights or claims he might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that he has received consideration beyond that to which he was previously entitled. Executive further acknowledges that he has received Attachment A to this letter agreement, which provides him with certain information regarding the job titles and ages of individuals employed by the Company who were selected and not selected for the Winter 2017 Restructuring Program (the "Program"). The decisional unit from which employees were considered for the Program included all employees of the Company. All such persons in the decisional unit were eligible for the Program. The selection criteria used in selecting individuals from the decisional unit included their business unit, job performance, skill sets and business need.

16. **Voluntary Assent –** Executive affirms that no other promises or agreements of any kind have been made to or with Executive by any person or entity whatsoever to cause him to sign this Agreement, and that he fully understands the meaning and intent of this Agreement. Executive further states and represents that he has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs his name of his own free act.

17. **Applicable Law** – This Agreement shall be interpreted and construed by the laws of the Commonwealth of Massachusetts, without regard to conflict of laws provisions. Executive hereby irrevocably submits to and acknowledges and recognizes the jurisdiction of the courts of the Commonwealth of Massachusetts, or if appropriate, a federal court located in the Commonwealth of Massachusetts (which courts, for purposes of this Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Agreement or the subject matter hereof.

18. **Entire Agreement** – This Agreement contains and constitutes the entire understanding and agreement between the Parties hereto with respect to Executive's separation from the Company, severance benefits and the settlement of claims against the Company, and cancels all previous oral and written negotiations, agreements, commitments and writings in connection therewith; provided, however, that nothing in this Section shall modify, cancel or supersede Executive's obligations set forth in Section 4 above.

19. **Tax Acknowledgement** – In connection with the Severance Benefits provided to Executive pursuant to this Agreement, the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and Executive shall be responsible for all applicable taxes owed by him with respect to such Severance Benefits under applicable law. Executive acknowledges that he is not relying upon the advice or representation of the Company with respect to the tax treatment of any of the Severance Benefits set forth in this Agreement.

20. **Section 409A** - This Agreement, and all payments hereunder, are intended to be exempt from, or if not so exempt, to comply with the requirements of, Section 409A of the Internal Revenue Code of 1986, as amended, and the guidance issued thereunder ("Section 409A"), and this Agreement shall be interpreted and administered accordingly. Notwithstanding anything to the contrary in this Agreement, if at the time of Executive's termination of employment, he is a "specified employee" as defined under Section 409A, any and all amounts payable hereunder on account of such termination of employment that would (but for this provision) be payable within six (6) months following the date of termination, shall instead be paid on the next business day following the expiration of such six (6) month period or, if earlier, upon Executive's death; except to the extent of amounts that do not constitute a deferral of compensation within the meaning of Treasury regulation Section 1.409A – 1(b) or other amounts or benefits that are exempt from or otherwise not subject to the requirements of Section 409A. For purposes of this Agreement, whether or not a termination of employment has occurred shall be determined consistently with Section 409A. In addition, each payment made pursuant to

the Agreement shall be treated as a separate payment and the right to a series of installment payments hereunder is to be treated as a right to a series of separate payments.

21. **Counterparts** – This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement. Facsimile and PDF signatures shall be deemed to be of equal force and effect as originals.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have set their hands and seals to this Agreement as of the date(s) written below.

Merrimack Pharmaceuticals, Inc.

/s/ Jeffrey A. Munsie Date: 4/3/17

By: Jeffrey A. Munsie, General Counsel

I hereby agree to the terms and conditions set forth above. I have been given at least forty-five (45) days to consider this Agreement and I have chosen to execute this on the date below. I intend that this Agreement will become a binding agreement if I do not revoke my acceptance within seven (7) days.

Peter N. Laivins

/s/ Peter N. Laivins Date: April 3, 2017

ATTACHMENT A

Older Workers Benefit Protection Act Table

SEPARATION AND RELEASE OF CLAIMS AGREEMENT

This Separation and Release of Claims Agreement (the "Agreement") is made as of the Effective Date (as defined below) between Merrimack Pharmaceuticals, Inc. (the "Company") and William M. McClements ("Executive") (together, the "Parties").

WHEREAS, the Company and Executive are parties to the Employment Agreement dated as of September 30, 2011 (the "Employment Agreement"), under which Executive currently serves as Head of Corporate Operations;

WHEREAS, the Parties wish to establish terms for Executive's orderly transition and separation from the Company effective on the Separation Date (as defined below); and

WHEREAS, the Parties agree that the payments, benefits and rights set forth in this Agreement shall be the exclusive payments, benefits and rights due Executive;

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

1. **Separation Date** – Executive's effective date of separation from employment with the Company will be April 3, 2017 (the "Separation Date"). Executive hereby resigns, as of the Separation Date, from his employment with the Company and as an officer of the Company. Executive agrees to execute and deliver any documents reasonably necessary to effectuate such resignations, provided that nothing in any such document is inconsistent with any terms set forth in this Agreement. As of the Separation Date, all salary payments from the Company will cease and any benefits Executive had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law or as otherwise specifically set forth in this Agreement.

2. **Severance Benefits** – In return for Executive's timely signing and not revoking this Agreement, and subject to Executive's compliance with all terms hereof, the Company will provide Executive with the following severance benefits in full satisfaction of the Company's obligations under the Employment Agreement (the "Severance Benefits"):

   (a) Salary Continuation – Commencing on the first regularly scheduled payroll date that follows the sixtieth (60th) day after the Separation Date (the "Payment Commencement Date"), the Company will, for a twelve (12) month period (the "Severance Period"), provide Executive with severance pay in the form of salary continuation payments at Executive's current annual base salary rate of $386,237, less all applicable taxes and withholdings and in accordance with the Company's regular payroll practices.

   (b) Group Health Insurance – Should Executive be eligible for and timely elect to continue receiving group health and/or dental insurance coverage under the law known as COBRA, the Company shall, until earlier of (x) the last day of the Severance Period, and (y) the date that Executive is no longer eligible for COBRA continuation coverage (the

"COBRA Contribution Period"), pay on Executive's behalf the share of the premium for such coverage that it currently pays on behalf of active and similarly situated employees who receive the same type of coverage. The remaining balance of any premium costs, and all premium costs after the COBRA Contribution Period, shall be paid by Executive on a monthly basis during the elected period of health insurance coverage under COBRA for as long as, and to the extent that, he remains eligible for COBRA continuation.

(c) 2016 Bonus – On the first regularly scheduled payroll date after the Separation Date, the Company shall provide Executive with a 2016 bonus payment of $135,183, less all applicable taxes and withholdings.

(d) 2017 Pro-Rata Bonus – On the Payment Commencement Date, the Company shall provide Executive with a 2017 pro-rata bonus payment of $33,035.04, less all applicable taxes and withholdings, which is equivalent to (i) the average of Executive's annual bonus payments over each of the three (3) years prior to the Separation Date, multiplied by (ii) a fraction, the numerator of which is the number of days during calendar year 2017 during which Executive remained employed by the Company and the denominator of which is 365.

(e) Other Benefits Continuation – During the Severance Period, the Company shall, to the extent allowed by applicable law and the applicable plan documents, continue to provide Executive with such other benefits as are described in Section 4(f) of the Employment Agreement, subject to and on a basis consistent with the terms, conditions and overall administration of such plans.

Other than the Severance Benefits, Executive will not be eligible for, nor shall he have a right to receive, any payments or benefits from the Company following the Separation Date, other than reimbursement for any outstanding business expenses in accordance with Company policy.

3. **Release of Claims** – In exchange for the consideration set forth in this Agreement, which Executive acknowledges he would not otherwise be entitled to receive, Executive hereby fully, forever, irrevocably and unconditionally releases, remises and discharges the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that Executive ever had or now has against any or all of the Released Parties up to the date on which he signs this Agreement, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to Executive's employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act, the Americans With Disabilities Act, the Age Discrimination in Employment Act, the Genetic Information Nondiscrimination Act, the Family and

Medical Leave Act, the Worker Adjustment and Retraining Notification Act, the Rehabilitation Act, Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, and the Employee Retirement Income Security Act, all as amended; all claims arising out of the Massachusetts Fair Employment Practices Act, Mass. Gen. Laws ch. 151B, § 1 et seq., the Massachusetts Wage Act, Mass. Gen. Laws ch. 149, § 148 et seq. (Massachusetts law regarding payment of wages and overtime), the Massachusetts Civil Rights Act, Mass. Gen. Laws ch. 12, §§ 11H and 11I, the Massachusetts Equal Rights Act, Mass. Gen. Laws. ch. 93, § 102 and Mass. Gen. Laws ch. 214, § 1C, the Massachusetts Labor and Industries Act, Mass. Gen. Laws ch. 149, § 1 et seq., Mass. Gen. Laws ch. 214, § 1B (Massachusetts right of privacy law), the Massachusetts Maternity Leave Act, Mass. Gen. Laws ch. 149, § 105D, and the Massachusetts Small Necessities Leave Act, Mass. Gen. Laws ch. 149, § 52D, all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or related to the Employment Agreement); all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of Executive's employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; *provided, however, that nothing in this release of claims prevents Executive from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that Executive acknowledges that he may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and Executive further waives any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding). This release also does not prevent Executive from reporting possible violations of federal securities laws to government enforcement agencies without notice to the Company, or from receiving any applicable award for information provided to such government enforcement agencies.* Further, nothing herein shall prevent Executive from bringing claims to enforce this Agreement, or release (i) any rights Executive may have under the Company's certificate of incorporation, by-laws, insurance and/or any indemnification agreement between him and the Company (and/or otherwise under law) for indemnification and/or defense as an employee, officer or director of the Company for his service to the Company (recognizing that such indemnification and/or defense is not guaranteed by this Agreement and shall be governed by the instrument or law, if any, providing for such indemnification and/or defense), (ii) any rights Executive may have to vested equity ownership in the Company under the applicable equity plans and agreements, (iii) any rights Executive may have to vested pension or 401(K) benefits or interests under any ERISA-Covered benefit plan (excluding severance) provided by the Company, (iv) any rights to COBRA or Workers' Compensation Benefits, or (v) any rights or claims that cannot be waived by law, including claims for unemployment benefits, which the Company agrees that it will not contest, provided that the Company will not make any false statement to any government agency.

4. **Continuing Obligations** – Executive acknowledges and reaffirms his obligation, to the extent permitted by law and except as otherwise permitted by Section 8 below, to keep

confidential and not to use or disclose any and all non-public information concerning the Company that he acquired during the course of his employment with the Company, including, but not limited to, any non-public information concerning the Company's business affairs, business prospects, and financial condition. Executive further acknowledges his continuing obligations with respect to confidential information, non-competition, non-solicitation, non-disclosure and developments as set forth in Sections 6-8 of the Employment Agreement and in the Non-Competition, Non-Solicitation, Non-Disclosure and Developments Agreement dated as of September 30, 2011 (the "Restrictive Covenant Agreement") (except to the extent modified by Section 14 of the Employment Agreement), which survive his separation from employment with the Company, provided, however, the Company agrees to waive Section 4(f) of the Restrictive Covenant Agreement.

5. **Non-Disparagement** – Executive understands and agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, he will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition. The Company will instruct its board members and executive officers, to the extent permitted by law and except as otherwise permitted by Section 8 below, not to make any false, disparaging, derogatory or defamatory statements to third parties about Executive.

6. **Return of Company Property** – Executive confirms that he will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, wireless handheld devices, cellular phones, tablets, etc.), Company identification and any other Company-owned property in his possession or control and that he will leave intact all electronic Company documents, including, but not limited to, those that he developed or helped to develop during his employment. Executive further agrees that he will cancel all accounts for his benefit, if any, in the Company's name, including, but not limited to, credit cards, telephone charge cards, cellular phone and/or wireless data accounts and computer accounts.

7. **Confidentiality** – Executive understands and agree that, to the extent permitted by law and except as otherwise permitted by Section 8 below, the contents of the negotiations and discussions resulting in this Agreement, shall be maintained as confidential by Executive and his agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company, except as required by law, and except to his immediate family, legal, financial and tax advisors, on the condition that any individuals informed must hold the above information in strict confidence. The Company agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, it shall keep the contents of the negotiations and discussions resulting in this Agreement confidential except as it believes in good faith to be reasonably necessary for a legitimate business purpose.

8. **Scope of Disclosure Restrictions** – Nothing in this Agreement prohibits Executive or any other person from communicating with government agencies about possible violations of federal, state or local laws or otherwise providing information to government agencies or participating in government agency investigations or proceedings. Executive is not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information Executive obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding Executive's confidentiality and nondisclosure obligations, Executive is hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

9. **Cooperation** – Executive agrees that, to the extent permitted by law, he shall, for one (1) year following the Separation Date, reasonably cooperate with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator regarding matters of which Executive has personal knowledge related to his employment with the Company. Executive's reasonable cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable, mutually agreed times and locations, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. The Company will reimburse Executive for all reasonable and documented out of pocket costs that he incurs to comply with this paragraph, including reasonable travel and lodging expenses. Executive further agrees that, to the extent permitted by law, he will notify the Company promptly in the event that he is served with a subpoena (other than a subpoena issued by a government agency), or in the event that he is asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

10. **Final Compensation** – Executive acknowledges that he has received all compensation due to him from the Company, including, but not limited to, all wages, bonuses and accrued, unused vacation time, and that he is not eligible or entitled to receive any additional payments or consideration from the Company beyond that provided for in Section 2 of this Agreement.

11. **Amendment and Waiver** – This Agreement shall be binding upon the Parties and may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the Parties. This Agreement is binding upon and shall inure to the benefit of the Parties and their respective agents, assigns, heirs, executors/administrators/personal representatives, and successors. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

12. **Validity** – Should any provision of this Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Agreement.

13. **Nature of Agreement –** Both Parties understand and agree that this Agreement is a separation agreement and does not constitute an admission of liability or wrongdoing on the part of the Company or Executive.

14. **Time for Consideration and Revocation –** Executive acknowledges that he was initially presented with this Agreement on January 25, 2017. Executive understands that this Agreement shall be of no force or effect, and that he shall not be eligible for the consideration described herein, unless he signs and returns this Agreement on the Separation Date, and does not revoke his acceptance in the subsequent seven (7) day period (the day immediately following expiration of such revocation period, the "Effective Date").

15. **Acknowledgments –** Executive acknowledges that he has been given at least forty-five (45) days to consider this Agreement, and that the Company is hereby advising him to consult with an attorney of his own choosing prior to signing this Agreement. Executive further acknowledges and agrees that any changes made to this Agreement following his initial receipt of this Agreement, whether material or immaterial, did not re-start or affect in any manner the original forty-five (45) day consideration period. Executive understands that he may revoke this Agreement for a period of seven (7) days after he signs it by notifying the Company in writing, and this Agreement shall not be effective or enforceable until the expiration of this seven (7) day revocation period. Executive understands and agrees that by entering into this Agreement he will be waiving any and all rights or claims he might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that he has received consideration beyond that to which he was previously entitled. Executive further acknowledges that he has received Attachment A to this letter agreement, which provides him with certain information regarding the job titles and ages of individuals employed by the Company who were selected and not selected for the Winter 2017 Restructuring Program (the "Program"). The decisional unit from which employees were considered for the Program included all employees of the Company. All such persons in the decisional unit were eligible for the Program. The selection criteria used in selecting

individuals from the decisional unit included their business unit, job performance, skill sets and business need.

16. **Voluntary Assent –** Executive affirms that no other promises or agreements of any kind have been made to or with Executive by any person or entity whatsoever to cause him to sign this Agreement, and that he fully understands the meaning and intent of this Agreement. Executive further states and represents that he has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs his name of his own free act.

17. **Applicable Law** – This Agreement shall be interpreted and construed by the laws of the Commonwealth of Massachusetts, without regard to conflict of laws provisions. Executive hereby irrevocably submits to and acknowledges and recognizes the jurisdiction of the courts of the Commonwealth of Massachusetts, or if appropriate, a federal court located in the Commonwealth of Massachusetts (which courts, for purposes of this Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Agreement or the subject matter hereof.

18. **Entire Agreement** – This Agreement contains and constitutes the entire understanding and agreement between the Parties hereto with respect to Executive's separation from the Company, severance benefits and the settlement of claims against the Company, and cancels all previous oral and written negotiations, agreements, commitments and writings in connection therewith; provided, however, that nothing in this Section shall modify, cancel or supersede Executive's obligations set forth in Section 4 above.

19. **Tax Acknowledgement** – In connection with the Severance Benefits provided to Executive pursuant to this Agreement, the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and Executive shall be responsible for all applicable taxes owed by him with respect to such Severance Benefits under applicable law. Executive acknowledges that he is not relying upon the advice or representation of the Company with respect to the tax treatment of any of the Severance Benefits set forth in this Agreement.

20. **Section 409A -** This Agreement, and all payments hereunder, are intended to be exempt from, or if not so exempt, to comply with the requirements of, Section 409A of the Internal Revenue Code of 1986, as amended, and the guidance issued thereunder ("Section 409A"), and this Agreement shall be interpreted and administered accordingly. Notwithstanding anything to the contrary in this Agreement, if at the time of Executive's termination of employment, he is a "specified employee" as defined under Section 409A, any and all amounts payable hereunder on account of such termination of employment that would (but for this provision) be payable within six (6) months following the date of termination, shall instead be paid on the next business day following the expiration of such six (6) month period or, if earlier, upon Executive's death; except to the extent of amounts that do not constitute a deferral of compensation within the meaning of Treasury regulation Section 1.409A – 1(b) or other amounts or benefits that are exempt from or otherwise not subject to the requirements of Section 409A. For purposes of this

Agreement, whether or not a termination of employment has occurred shall be determined consistently with Section 409A. In addition, each payment made pursuant to the Agreement shall be treated as a separate payment and the right to a series of installment payments hereunder is to be treated as a right to a series of separate payments.

21. **Counterparts** – This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement. Facsimile and PDF signatures shall be deemed to be of equal force and effect as originals.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have set their hands and seals to this Agreement as of the date(s) written below.

Merrimack Pharmaceuticals, Inc.

/s/ Jeffrey A. Munsie Date: 4/3/17

By: Jeffrey A. Munsie, General Counsel

I hereby agree to the terms and conditions set forth above. I have been given at least forty-five (45) days to consider this Agreement and I have chosen to execute this on the date below. I intend that this Agreement will become a binding agreement if I do not revoke my acceptance within seven (7) days.

William M. McClements

/s/ William M. McClements Date: 4/3/17

ATTACHMENT A

Older Workers Benefit Protection Act Table

SEPARATION AND RELEASE OF CLAIMS AGREEMENT

This Separation and Release of Claims Agreement (the "Agreement") is made as of the Effective Date (as defined below) between Merrimack Pharmaceuticals, Inc. (the "Company") and Edward J. Stewart ("Executive") (together, the "Parties").

WHEREAS, the Company and Executive are parties to the Amended and Restated Employment Agreement dated as of August 16, 2011 (the "Employment Agreement"), under which Executive currently serves as Head of Commercial;

WHEREAS, the Parties wish to establish terms for Executive's orderly transition and separation from the Company effective on the Separation Date (as defined below); and

WHEREAS, the Parties agree that the payments, benefits and rights set forth in this Agreement shall be the exclusive payments, benefits and rights due Executive;

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

1. **Separation Date** – Executive's effective date of separation from employment with the Company will be April 3, 2017 (the "Separation Date"). Executive hereby resigns, as of the Separation Date, from his employment with the Company and as an officer of the Company. The Parties agree to execute and deliver any documents reasonably necessary to effectuate such resignations, provided that nothing in any such document is inconsistent with any terms set forth in this Agreement. As of the Separation Date, all salary payments from the Company will cease and any benefits Executive had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law or as otherwise specifically set forth in this Agreement.

2. **Severance Benefits** – In return for Executive's timely signing and not revoking this Agreement, and subject to Executive's compliance with all terms hereof, the Company will provide Executive with the following severance benefits in full satisfaction of the Company's obligations under the Employment Agreement (the "Severance Benefits"):

   (a) Salary Continuation – Commencing on the first regularly scheduled payroll date that follows the sixtieth (60th) day after the Separation Date (the "Payment Commencement Date"), the Company will, for a twelve (12) month period (the "Severance Period"), provide Executive with severance pay in the form of salary continuation payments at Executive's current annual base salary rate of $360,281, less all applicable taxes and withholdings and in accordance with the Company's regular payroll practices.

   (b) Group Health Insurance – Should Executive be eligible for and timely elect to continue receiving group health and/or dental insurance coverage under the law known as COBRA, the Company shall, until earlier of (x) the last day of the Severance Period, and (y) the date that Executive is no longer eligible for COBRA continuation coverage (the

"COBRA Contribution Period"), pay on Executive's behalf the share of the premium for such coverage that it currently pays on behalf of active and similarly situated employees who receive the same type of coverage. The remaining balance of any premium costs, and all premium costs after the COBRA Contribution Period, shall be paid by Executive on a monthly basis during the elected period of health insurance coverage under COBRA for as long as, and to the extent that, he remains eligible for COBRA continuation.

(c) 2016 Bonus – On the first regularly scheduled payroll date after the Separation Date, the Company shall provide Executive with a 2016 bonus payment of $126,098.

(d) 2017 Pro-Rata Bonus – On the Payment Commencement Date, the Company shall provide Executive with a 2017 pro-rata bonus payment of $30,211.84, which is equivalent to (i) the average of Executive's annual bonus payments over each of the three (3) years prior to the Separation Date, multiplied by (ii) a fraction, the numerator of which is the number of days during calendar year 2017 during which Executive remained employed by the Company and the denominator of which is 365.

(e) Other Benefits Continuation – During the Severance Period, the Company shall, to the extent allowed by applicable law and the applicable plan documents, continue to provide Executive with such other benefits as are described in Section 4(f) of the Employment Agreement, subject to and on a basis consistent with the terms, conditions and overall administration of such plans.

Other than the Severance Benefits, Executive will not be eligible for, nor shall he have a right to receive, any payments or benefits from the Company following the Separation Date, other than reimbursement for any outstanding business expenses in accordance with Company policy.

3. **Release of Claims** – In exchange for the consideration set forth in this Agreement, which Executive acknowledges he would not otherwise be entitled to receive, and subject to the exceptions set forth herein, Executive hereby fully, forever, irrevocably and unconditionally releases, remises and discharges the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that Executive ever had or now has against any or all of the Released Parties up to the date on which he signs this Agreement, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to Executive's employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act, the Americans With Disabilities Act, the Age Discrimination in Employment Act, the Genetic Information Nondiscrimination Act, the Family and Medical Leave Act, the Worker Adjustment and Retraining Notification Act, the Rehabilitation Act, Executive

Order 11246, Executive Order 11141, the Fair Credit Reporting Act, and the Employee Retirement Income Security Act, all as amended; all claims arising out of the Massachusetts Fair Employment Practices Act, Mass. Gen. Laws ch. 151B, § 1 et seq., the Massachusetts Wage Act, Mass. Gen. Laws ch. 149, § 148 et seq. (Massachusetts law regarding payment of wages and overtime), the Massachusetts Civil Rights Act, Mass. Gen. Laws ch. 12, §§ 11H and 11I, the Massachusetts Equal Rights Act, Mass. Gen. Laws. ch. 93, § 102 and Mass. Gen. Laws ch. 214, § 1C, the Massachusetts Labor and Industries Act, Mass. Gen. Laws ch. 149, § 1 et seq., Mass. Gen. Laws ch. 214, § 1B (Massachusetts right of privacy law), the Massachusetts Maternity Leave Act, Mass. Gen. Laws ch. 149, § 105D, and the Massachusetts Small Necessities Leave Act, Mass. Gen. Laws ch. 149, § 52D, all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or related to the Employment Agreement); all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of Executive's employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; *provided, however, that nothing in this release of claims prevents Executive from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that Executive acknowledges that he may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and Executive further waives any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding). This release also does not prevent Executive from reporting possible violations of federal securities laws to government enforcement agencies without notice to the Company, or from receiving any applicable award for information provided to such government enforcement agencies.* Further, nothing herein shall prevent Executive from bringing claims to enforce this Agreement, or release (i) any rights Executive may have under the Company's certificate of incorporation, by-laws, insurance and/or any indemnification agreement between him and the Company (and/or otherwise under law) for indemnification and/or defense as an employee, officer or director of the Company for his service to the Company (recognizing that such indemnification and/or defense is not guaranteed by this Agreement and shall be governed by the instrument or law, if any, providing for such indemnification and/or defense), (ii) any rights Executive may have to vested equity ownership in the Company under the applicable equity plans and agreements, (iii) any rights Executive may have to vested pension or 401(K) benefits or interests under any ERISA-Covered benefit plan (excluding severance) provided by the Company, (iv) any rights to COBRA or Workers' Compensation Benefits, or (v) any rights or claims that cannot be waived by law, including claims for unemployment benefits, which the Company agrees that it will not contest, provided that the Company will not make any false statement to any government agency.

4. **Continuing Obligations** – Executive acknowledges and reaffirms his obligation, to the extent permitted by law and except as otherwise permitted by Section 8 below, to keep confidential and not to use or disclose any and all non-public information concerning the

Company that he acquired during the course of his employment with the Company, including, but not limited to, any non-public information concerning the Company's business affairs, business prospects, and financial condition. Executive further acknowledges his continuing obligations with respect to confidential information, non-competition, non-solicitation, non-disclosure and developments as set forth in Sections 6-8 of the Employment Agreement and in the Non-Competition, Non-Solicitation, Non-Disclosure and Developments Agreement dated as of August 16, 2011 (the "Restrictive Covenant Agreement") (except to the extent modified by Section 14 of the Employment Agreement), which survive his separation from employment with the Company, provided, however, the Company hereby waives Section 4(f) of the Restrictive Covenant Agreement.

5. **Non-Disparagement** – Executive understands and agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, he will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition. The Company will instruct its board members and executive officers, to the extent permitted by law and except as otherwise permitted by Section 8 below, not to make any false, disparaging, derogatory or defamatory statements to third parties about Executive. The Company shall refer inquiries from prospective employers to its Human Resources department for response, which shall state the dates of employment and job title for Executive.

6. **Return of Company Property** – Executive confirms that he will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, wireless handheld devices, cellular phones, tablets, etc.), Company identification and any other Company-owned property in his possession or control and that he will leave intact all electronic Company documents, including, but not limited to, those that he developed or helped to develop during his employment. Executive further agrees that he will cancel all accounts for his benefit, if any, in the Company's name, including, but not limited to, credit cards, telephone charge cards, cellular phone and/or wireless data accounts and computer accounts.

7. **Confidentiality** – Executive understands and agree that, to the extent permitted by law, except to enforce or effectuate the terms of this Agreement, and except as otherwise permitted by Section 8 below, the terms and contents of this Agreement, and the contents of the negotiations and discussions resulting in this Agreement, shall be maintained as confidential by Executive and his agents and representatives and shall not be disclosed except as otherwise agreed to in writing by the Company, except as required by law, and except to his immediate family, potential lenders, legal, financial and tax advisors, on the condition that any individuals informed must hold the above information in strict confidence. The Company agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, it shall keep the contents of the negotiations and

discussions resulting in this Agreement confidential except as it believes in good faith to be reasonably necessary for a legitimate business purpose.

8. **Scope of Disclosure Restrictions** – Nothing in this Agreement prohibits Executive or any other person from communicating with government agencies about possible violations of federal, state or local laws or otherwise providing information to government agencies or participating in government agency investigations or proceedings. Executive is not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information Executive obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding Executive's confidentiality and nondisclosure obligations, Executive is hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

9. **Cooperation** – Executive agrees that, to the extent permitted by law and subject to the provisions set forth herein, he shall, for one (1) year following the Separation Date, reasonably cooperate with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. Executive's reasonable cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable, mutually agreed times and locations, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. Executive's cooperation obligations shall be met by providing truthful information of which he has personal knowledge. The Company will reimburse Executive for all reasonable and documented out of pocket costs that he incurs to comply with this paragraph. Executive further agrees that, to the extent permitted by law, he will notify the Company promptly in the event that he is served with a subpoena (other than a subpoena issued by a government agency), or in the event that he is asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

10. **Final Compensation** – Executive acknowledges that he has received all compensation due to him from the Company, including, but not limited to, all wages, bonuses and accrued, unused vacation time, and that he is not eligible or entitled to receive any

additional payments or consideration from the Company beyond that provided for in Section 2 of this Agreement.

11. **Amendment and Waiver** – This Agreement shall be binding upon the Parties and may not be modified in any manner, except by an instrument in writing of concurrent or subsequent date signed by duly authorized representatives of the Parties. This Agreement is binding upon and shall inure to the benefit of the Parties and their respective agents, assigns, heirs, executors/administrators/personal representatives, and successors. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

12. **Validity** – Should any provision of this Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Agreement.

13. **Nature of Agreement –** Both Parties understand and agree that this Agreement is a separation agreement and does not constitute an admission of liability or wrongdoing on the part of the Company or Executive.

14. **Time for Consideration and Revocation –** Executive acknowledges that he was initially presented with this Agreement on January 25, 2017. Executive understands that this Agreement shall be of no force or effect, and that he shall not be eligible for the consideration described herein, unless he signs and returns this Agreement on the Separation Date, and does not revoke his acceptance in the subsequent seven (7) day period (the day immediately following expiration of such revocation period, the "Effective Date").

15. **Acknowledgments –** Executive acknowledges that he has been given at least forty-five (45) days to consider this Agreement, and that the Company is hereby advising him to consult with an attorney of his own choosing prior to signing this Agreement. Executive further acknowledges and agrees that any changes made to this Agreement following his initial receipt of this Agreement, whether material or immaterial, did not re-start or affect in any manner the original forty-five (45) day consideration period. Executive understands that he may revoke this Agreement for a period of seven (7) days after he signs it by notifying the Company in writing, and this Agreement shall not be effective or enforceable until the expiration of this seven (7) day revocation period. Executive understands and agrees that by entering into this Agreement he will be waiving any and all rights or claims he might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that he has received consideration beyond that to which he was previously entitled. Executive further acknowledges that he has received Attachment A to this letter agreement, which provides him with certain information regarding the job titles and ages of individuals employed by the Company who were selected and not selected for the Winter 2017 Restructuring Program (the "Program"). The decisional unit from which employees were considered

for the Program included all employees of the Company. All such persons in the decisional unit were eligible for the Program. The selection criteria used in selecting individuals from the decisional unit included their business unit, job performance, skill sets and business need.

16. **Voluntary Assent –** Executive affirms that no other promises or agreements of any kind have been made to or with Executive by any person or entity whatsoever to cause him to sign this Agreement, and that he fully understands the meaning and intent of this Agreement. Executive further states and represents that he has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs his name of his own free act.

17. **Applicable Law** – This Agreement shall be interpreted and construed by the laws of the Commonwealth of Massachusetts, without regard to conflict of laws provisions. Executive hereby irrevocably submits to and acknowledges and recognizes the jurisdiction of the courts of the Commonwealth of Massachusetts, or if appropriate, a federal court located in the Commonwealth of Massachusetts (which courts, for purposes of this Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Agreement or the subject matter hereof.

18. **Entire Agreement** – This Agreement contains and constitutes the entire understanding and agreement between the Parties hereto with respect to Executive's separation from the Company, severance benefits and the settlement of claims against the Company, and cancels all previous oral and written negotiations, agreements, commitments and writings in connection therewith; provided, however, that nothing in this Section shall modify, cancel or supersede Executive's obligations set forth in Section 4 above.

19. **Tax Acknowledgement** – In connection with the Severance Benefits provided to Executive pursuant to this Agreement, the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and Executive shall be responsible for all applicable taxes owed by him with respect to such Severance Benefits under applicable law. Executive acknowledges that he is not relying upon the advice or representation of the Company with respect to the tax treatment of any of the Severance Benefits set forth in this Agreement.

20. **Section 409A** - This Agreement, and all payments hereunder, are intended to be exempt from, or if not so exempt, to comply with the requirements of, Section 409A of the Internal Revenue Code of 1986, as amended, and the guidance issued thereunder ("Section 409A"), and this Agreement shall be interpreted and administered accordingly. Notwithstanding anything to the contrary in this Agreement, if at the time of Executive's termination of employment, he is a "specified employee" as defined under Section 409A, any and all amounts payable hereunder on account of such termination of employment that would (but for this provision) be payable within six (6) months following the date of termination, shall instead be paid on the next business day following the expiration of such six (6) month period or, if earlier, upon Executive's death; except to the extent of amounts that do not constitute a deferral of compensation within the meaning of Treasury

regulation Section 1.409A – 1(b) or other amounts or benefits that are exempt from or otherwise not subject to the requirements of Section 409A. For purposes of this Agreement, whether or not a termination of employment has occurred shall be determined consistently with Section 409A. In addition, each payment made pursuant to the Agreement shall be treated as a separate payment and the right to a series of installment payments hereunder is to be treated as a right to a series of separate payments.

21. **Counterparts** – This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement. Facsimile and PDF signatures shall be deemed to be of equal force and effect as originals.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have set their hands and seals to this Agreement as of the date(s) written below.

Merrimack Pharmaceuticals, Inc.

/s/ Jeffrey A. Munsie Date: 4/3/17

By: Jeffrey A. Munsie, General Counsel

I hereby agree to the terms and conditions set forth above. I have been given at least forty-five (45) days to consider this Agreement and I have chosen to execute this on the date below. I intend that this Agreement will become a binding agreement if I do not revoke my acceptance within seven (7) days.

Edward J. Stewart

/s/ Edward J. Stewart Date: 4/3/17

ATTACHMENT A

Older Workers Benefit Protection Act Table

SEPARATION AND RELEASE OF CLAIMS AGREEMENT

This Separation and Release of Claims Agreement (the "Agreement") is made as of the Effective Date (as defined below) between Merrimack Pharmaceuticals, Inc. (the "Company") and William A. Sullivan ("Executive") (together, the "Parties").

WHEREAS, the Company and Executive are parties to the Amended and Restated Employment Agreement dated as of August 16, 2011 (the "Employment Agreement"), under which Executive currently serves as Head of Finance and Accounting;

WHEREAS, the Parties wish to establish terms for Executive's orderly transition and separation from the Company effective on the Separation Date (as defined below); and

WHEREAS, the Parties agree that the payments, benefits and rights set forth in this Agreement shall be the exclusive payments, benefits and rights due Executive;

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

1. **Separation Date** – Executive's effective date of separation from employment with the Company will be April 3, 2017 (the "Separation Date"). Executive hereby resigns, as of the Separation Date, from his employment with the Company and as an officer of the Company. Executive agrees to execute and deliver any documents reasonably necessary to effectuate such resignations, provided that nothing in any such document is inconsistent with any terms set forth in this Agreement. As of the Separation Date, all salary payments from the Company will cease and any benefits Executive had as of the Separation Date under Company-provided benefit plans, programs, or practices will terminate, except as required by federal or state law or as otherwise specifically set forth in this Agreement.

2. **Severance Benefits** – In return for Executive's timely signing and not revoking this Agreement, and subject to Executive's compliance with all terms hereof, the Company will provide Executive with the following severance benefits in full satisfaction of the Company's obligations under the Employment Agreement (the "Severance Benefits"):

   (a) Salary Continuation – Commencing on the first regularly scheduled payroll date that follows the sixtieth (60th) day after the Separation Date (the "Payment Commencement Date"), the Company will, for a twelve (12) month period (the "Severance Period"), provide Executive with severance pay in the form of salary continuation payments at Executive's current annual base salary rate of $321,273, less all applicable taxes and withholdings and in accordance with the Company's regular payroll practices.

   (b) Group Health Insurance – Should Executive be eligible for and timely elect to continue receiving group health and/or dental insurance coverage under the law known as COBRA, the Company shall, until earlier of (x) the last day of the Severance Period, and (y) the date that Executive is no longer eligible for COBRA continuation coverage (the

"COBRA Contribution Period"), pay on Executive's behalf the share of the premium for such coverage that it currently pays on behalf of active and similarly situated employees who receive the same type of coverage. The remaining balance of any premium costs, and all premium costs after the COBRA Contribution Period, shall be paid by Executive on a monthly basis during the elected period of health insurance coverage under COBRA for as long as, and to the extent that, he remains eligible for COBRA continuation.

(c) 2016 Bonus – On the first regularly scheduled payroll date after the Separation Date, the Company shall provide Executive with a 2016 bonus payment of $112,446, less all applicable taxes and withholdings.

(d) 2017 Pro-Rata Bonus – On the Payment Commencement Date, the Company shall provide Executive with a 2017 pro-rata bonus payment of $27,565.28, less all applicable taxes and withholdings, which is equivalent to (i) the average of Executive's annual bonus payments over each of the three (3) years prior to the Separation Date, multiplied by (ii) a fraction, the numerator of which is the number of days during calendar year 2017 during which Executive remained employed by the Company and the denominator of which is 365.

(e) Other Benefits Continuation – During the Severance Period, the Company shall, to the extent allowed by applicable law and the applicable plan documents, continue to provide Executive with such other benefits as are described in Section 4(f) of the Employment Agreement, subject to and on a basis consistent with the terms, conditions and overall administration of such plans.

Other than the Severance Benefits, Executive will not be eligible for, nor shall he have a right to receive, any payments or benefits from the Company following the Separation Date, other than reimbursement for any outstanding business expenses in accordance with Company policy.

3. **Release of Claims** – In exchange for the consideration set forth in this Agreement, which Executive acknowledges he would not otherwise be entitled to receive, Executive hereby fully, forever, irrevocably and unconditionally releases, remises and discharges the Company, its affiliates, subsidiaries, parent companies, predecessors, and successors, and all of their respective past and present officers, directors, stockholders, partners, members, employees, agents, representatives, plan administrators, attorneys, insurers and fiduciaries (each in their individual and corporate capacities) (collectively, the "Released Parties") from any and all claims, charges, complaints, demands, actions, causes of action, suits, rights, debts, sums of money, costs, accounts, reckonings, covenants, contracts, agreements, promises, doings, omissions, damages, executions, obligations, liabilities, and expenses (including attorneys' fees and costs), of every kind and nature that Executive ever had or now has against any or all of the Released Parties up to the date on which he signs this Agreement, whether known or unknown, including, but not limited to, any and all claims arising out of or relating to Executive's employment with and/or separation from the Company, including, but not limited to, all claims under Title VII of the Civil Rights Act, the Americans With Disabilities Act, the Age Discrimination in Employment Act, the Genetic Information Nondiscrimination Act, the Family and

Medical Leave Act, the Worker Adjustment and Retraining Notification Act, the Rehabilitation Act, Executive Order 11246, Executive Order 11141, the Fair Credit Reporting Act, and the Employee Retirement Income Security Act, all as amended; all claims arising out of the Massachusetts Fair Employment Practices Act, Mass. Gen. Laws ch. 151B, § 1 et seq., the Massachusetts Wage Act, Mass. Gen. Laws ch. 149, § 148 et seq. (Massachusetts law regarding payment of wages and overtime), the Massachusetts Civil Rights Act, Mass. Gen. Laws ch. 12, §§ 11H and 11I, the Massachusetts Equal Rights Act, Mass. Gen. Laws. ch. 93, § 102 and Mass. Gen. Laws ch. 214, § 1C, the Massachusetts Labor and Industries Act, Mass. Gen. Laws ch. 149, § 1 et seq., Mass. Gen. Laws ch. 214, § 1B (Massachusetts right of privacy law), the Massachusetts Maternity Leave Act, Mass. Gen. Laws ch. 149, § 105D, and the Massachusetts Small Necessities Leave Act, Mass. Gen. Laws ch. 149, § 52D, all as amended; all common law claims including, but not limited to, actions in defamation, intentional infliction of emotional distress, misrepresentation, fraud, wrongful discharge, and breach of contract (including, without limitation, all claims arising out of or related to the Employment Agreement); all state and federal whistleblower claims to the maximum extent permitted by law; and any claim or damage arising out of Executive's employment with and/or separation from the Company (including a claim for retaliation) under any common law theory or any federal, state or local statute or ordinance not expressly referenced above; *provided, however, that nothing in this release of claims prevents Executive from filing a charge with, cooperating with, or participating in any investigation or proceeding before, the Equal Employment Opportunity Commission or a state fair employment practices agency (except that Executive acknowledges that he may not recover any monetary benefits in connection with any such charge, investigation, or proceeding, and Executive further waives any rights or claims to any payment, benefit, attorneys' fees or other remedial relief in connection with any such charge, investigation or proceeding). This release also does not prevent Executive from reporting possible violations of federal securities laws to government enforcement agencies without notice to the Company, or from receiving any applicable award for information provided to such government enforcement agencies.* Further, nothing herein shall prevent Executive from bringing claims to enforce this Agreement, or release (i) any rights Executive may have under the Company's certificate of incorporation, by-laws, insurance and/or any indemnification agreement between him and the Company (and/or otherwise under law) for indemnification and/or defense as an employee, officer or director of the Company for his service to the Company (recognizing that such indemnification and/or defense is not guaranteed by this Agreement and shall be governed by the instrument or law, if any, providing for such indemnification and/or defense), (ii) any rights Executive may have to vested equity ownership in the Company under the applicable equity plans and agreements, (iii) any rights Executive may have to vested pension or 401(K) benefits or interests under any ERISA-Covered benefit plan (excluding severance) provided by the Company, (iv) any rights to COBRA or Workers' Compensation Benefits, or (v) any rights or claims that cannot be waived by law, including claims for unemployment benefits, which the Company agrees that it will not contest, provided that the Company will not make any false statement to any government agency.

4. **Continuing Obligations** – Executive acknowledges and reaffirms his obligation, to the extent permitted by law and except as otherwise permitted by Section 8 below, to keep

confidential and not to use or disclose any and all non-public information concerning the Company that he acquired during the course of his employment with the Company, including, but not limited to, any non-public information concerning the Company's business affairs, business prospects, and financial condition. Executive further acknowledges his continuing obligations with respect to confidential information, non-competition, non-solicitation, non-disclosure and developments as set forth in Sections 6-8 of the Employment Agreement and in the Non-Competition, Non-Solicitation, Non-Disclosure and Developments Agreement dated as of August 16, 2011 (the "Restrictive Covenant Agreement") (except to the extent modified by Section 14 of the Employment Agreement), which survive his separation from employment with the Company, provided, however, the Company agrees to waive Section 4(f) of the Restrictive Covenant Agreement.

5. **Non-Disparagement** – Executive understands and agrees that, to the extent permitted by law and except as otherwise permitted by Section 8 below, he will not, in public or private, make any false, disparaging, derogatory or defamatory statements, online (including, without limitation, on any social media, networking, or employer review site) or otherwise, to any person or entity, including, but not limited to, any media outlet, industry group, financial institution or current or former employee, board member, consultant, client or customer of the Company, regarding the Company or any of the other Released Parties, or regarding the Company's business affairs, business prospects, or financial condition. The Company will instruct its board members and executive officers, to the extent permitted by law and except as otherwise permitted by Section 8 below, not to make any false, disparaging, derogatory or defamatory statements to third parties about Executive.

6. **Return of Company Property** – Executive confirms that he will return to the Company all keys, files, records (and copies thereof), equipment (including, but not limited to, computer hardware, software and printers, wireless handheld devices, cellular phones, tablets, etc.), Company identification and any other Company-owned property in his possession or control and that he will leave intact all electronic Company documents, including, but not limited to, those that he developed or helped to develop during his employment. Executive further agrees that he will cancel all accounts for his benefit, if any, in the Company's name, including, but not limited to, credit cards, telephone charge cards, cellular phone and/or wireless data accounts and computer accounts.

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8. **Scope of Disclosure Restrictions** – Nothing in this Agreement prohibits Executive or any other person from communicating with government agencies about possible violations of federal, state or local laws or otherwise providing information to government agencies or participating in government agency investigations or proceedings. Executive is not required to notify the Company of any such communications; provided, however, that nothing herein authorizes the disclosure of information Executive obtained through a communication that was subject to the attorney-client privilege. Further, notwithstanding Executive's confidentiality and nondisclosure obligations, Executive is hereby advised as follows pursuant to the Defend Trade Secrets Act: "An individual shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of a trade secret that (A) is made (i) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. An individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the attorney of the individual and use the trade secret information in the court proceeding, if the individual (A) files any document containing the trade secret under seal; and (B) does not disclose the trade secret, except pursuant to court order."

9. **Cooperation** – Executive agrees that, to the extent permitted by law, he shall, for one (1) year following the Separation Date, reasonably cooperate with the Company in the investigation, defense or prosecution of any claims or actions which already have been brought, are currently pending, or which may be brought in the future against the Company by a third party or by or on behalf of the Company against any third party, whether before a state or federal court, any state or federal government agency, or a mediator or arbitrator. Executive's reasonable cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with the Company's counsel, at reasonable times and locations designated by the Company, to investigate or prepare the Company's claims or defenses, to prepare for trial or discovery or an administrative hearing, mediation, arbitration or other proceeding and to act as a witness when requested by the Company. The Company will reimburse Executive for all reasonable and documented out of pocket costs that he incurs to comply with this paragraph. Executive further agrees that, to the extent permitted by law, he will notify the Company promptly in the event that he is served with a subpoena (other than a subpoena issued by a government agency), or in the event that he is asked to provide a third party (other than a government agency) with information concerning any actual or potential complaint or claim against the Company.

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subsequent date signed by duly authorized representatives of the Parties. This Agreement is binding upon and shall inure to the benefit of the Parties and their respective agents, assigns, heirs, executors/administrators/personal representatives, and successors. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

12. **Validity** – Should any provision of this Agreement be declared or be determined by any court of competent jurisdiction to be illegal or invalid, the validity of the remaining parts, terms or provisions shall not be affected thereby and said illegal or invalid part, term or provision shall be deemed not to be a part of this Agreement.

13. **Nature of Agreement –** Both Parties understand and agree that this Agreement is a separation agreement and does not constitute an admission of liability or wrongdoing on the part of the Company or Executive.

14. **Time for Consideration and Revocation –** Executive acknowledges that he was initially presented with this Agreement on January 25, 2017. Executive understands that this Agreement shall be of no force or effect, and that he shall not be eligible for the consideration described herein, unless he signs and returns this Agreement on the Separation Date, and does not revoke his acceptance in the subsequent seven (7) day period (the day immediately following expiration of such revocation period, the "Effective Date").

15. **Acknowledgments –** Executive acknowledges that he has been given at least forty-five (45) days to consider this Agreement, and that the Company is hereby advising him to consult with an attorney of his own choosing prior to signing this Agreement. Executive further acknowledges and agrees that any changes made to this Agreement following his initial receipt of this Agreement, whether material or immaterial, did not re-start or affect in any manner the original forty-five (45) day consideration period. Executive understands that he may revoke this Agreement for a period of seven (7) days after he signs it by notifying the Company in writing, and this Agreement shall not be effective or enforceable until the expiration of this seven (7) day revocation period. Executive understands and agrees that by entering into this Agreement he will be waiving any and all rights or claims he might have under the Age Discrimination in Employment Act, as amended by the Older Workers Benefit Protection Act, and that he has received consideration beyond that to which he was previously entitled. Executive further acknowledges that he has received Attachment A to this letter agreement, which provides him with certain information regarding the job titles and ages of individuals employed by the Company who were selected and not selected for the Winter 2017 Restructuring Program (the "Program"). The decisional unit from which employees were considered for the Program included all employees of the Company. All such persons in the decisional unit were eligible for the Program. The selection criteria used in selecting individuals from the decisional unit included their business unit, job performance, skill sets and business need.

16. **Voluntary Assent –** Executive affirms that no other promises or agreements of any kind have been made to or with Executive by any person or entity whatsoever to cause him to sign this Agreement, and that he fully understands the meaning and intent of this Agreement. Executive further states and represents that he has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs his name of his own free act.

17. **Applicable Law** – This Agreement shall be interpreted and construed by the laws of the Commonwealth of Massachusetts, without regard to conflict of laws provisions. Executive hereby irrevocably submits to and acknowledges and recognizes the jurisdiction of the courts of the Commonwealth of Massachusetts, or if appropriate, a federal court located in the Commonwealth of Massachusetts (which courts, for purposes of this Agreement, are the only courts of competent jurisdiction), over any suit, action or other proceeding arising out of, under or in connection with this Agreement or the subject matter hereof.

18. **Entire Agreement** – This Agreement contains and constitutes the entire understanding and agreement between the Parties hereto with respect to Executive's separation from the Company, severance benefits and the settlement of claims against the Company, and cancels all previous oral and written negotiations, agreements, commitments and writings in connection therewith; provided, however, that nothing in this Section shall modify, cancel or supersede Executive's obligations set forth in Section 4 above.

19. **Tax Acknowledgement** – In connection with the Severance Benefits provided to Executive pursuant to this Agreement, the Company shall withhold and remit to the tax authorities the amounts required under applicable law, and Executive shall be responsible for all applicable taxes owed by him with respect to such Severance Benefits under applicable law. Executive acknowledges that he is not relying upon the advice or representation of the Company with respect to the tax treatment of any of the Severance Benefits set forth in this Agreement.

20. **Section 409A** - This Agreement, and all payments hereunder, are intended to be exempt from, or if not so exempt, to comply with the requirements of, Section 409A of the Internal Revenue Code of 1986, as amended, and the guidance issued thereunder ("Section 409A"), and this Agreement shall be interpreted and administered accordingly. Notwithstanding anything to the contrary in this Agreement, if at the time of Executive's termination of employment, he is a "specified employee" as defined under Section 409A, any and all amounts payable hereunder on account of such termination of employment that would (but for this provision) be payable within six (6) months following the date of termination, shall instead be paid on the next business day following the expiration of such six (6) month period or, if earlier, upon Executive's death; except to the extent of amounts that do not constitute a deferral of compensation within the meaning of Treasury regulation Section 1.409A – 1(b) or other amounts or benefits that are exempt from or otherwise not subject to the requirements of Section 409A. For purposes of this Agreement, whether or not a termination of employment has occurred shall be determined consistently with Section 409A. In addition, each payment made pursuant to

the Agreement shall be treated as a separate payment and the right to a series of installment payments hereunder is to be treated as a right to a series of separate payments.

21. **Counterparts** – This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement. Facsimile and PDF signatures shall be deemed to be of equal force and effect as originals.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the Parties have set their hands and seals to this Agreement as of the date(s) written below.

Merrimack Pharmaceuticals, Inc.

/s/ Jeffrey A. Munsie Date: 4/6/17

By: Jeffrey A. Munsie, General Counsel

I hereby agree to the terms and conditions set forth above. I have been given at least forty-five (45) days to consider this Agreement and I have chosen to execute this on the date below. I intend that this Agreement will become a binding agreement if I do not revoke my acceptance within seven (7) days.

William A. Sullivan

/s/ William A. Sullivan Date: 4/6/17

ATTACHMENT A

Older Workers Benefit Protection Act Table

Exhibit 10.6

April 3, 2017

Dear Yasir,

Merrimack Pharmaceuticals, Inc. ("Merrimack") is pleased to provide you a one-time retention bonus of $350,000 (the "Retention Bonus"), less all applicable taxes and withholdings. A portion of the Retention Bonus is considered an advance and is not earned unless you remain continuously employed and in good standing with Merrimack based on the following terms: (i) if you terminate your employment with Merrimack on or before December 31, 2017 without Good Reason (as defined in your Employment Agreement) or Merrimack terminates your employment on or before December 31, 2017 for Cause (as defined in your Employment Agreement), you shall be required to repay $233,333.33 of the Retention Bonus, minus any applicable taxes and withholdings that you were required to pay with respect to such amount, within 60 days after your termination, and (ii) if you terminate your employment with Merrimack on or after January 1, 2018 but on or before June 30, 2018 without Good Reason or Merrimack terminates your employment on or after January 1, 2018 but on or before June 30, 2018 for Cause, you shall be required to repay $116,666.67 of the Retention Bonus, minus any applicable taxes and withholdings that you were required to pay with respect to such amount, within 60 days after your termination, in each case, to the maximum extent permitted by applicable law. You shall not be required to repay any portion of the Retention Bonus if you terminate your employment with Merrimack at any time for Good Reason or if Merrimack terminates your employment at any time without Cause.

This letter contains all of the understandings and representations between Merrimack and you relating to the Retention Bonus and supersedes all prior understandings, representations and agreements with respect to any retention bonus payments. The opportunity for you to receive the Retention Bonus under the terms set forth in this letter shall not be construed as a guarantee of employment for any specific period of time, and your employment shall remain at-will.

We are excited to continue working with you. If the terms set forth in this letter are acceptable to you, please sign this letter and return it to me. If you have any questions do not hesitate to reach out.

Best regards,

/s/ Shelley Phelps
Shelley Phelps, Talent Team

Accepted and Agreed:

/s/ Yasir Al-Wakeel
Yasir Al-Wakeel

Exhibit 10.7

April 3, 2017

Dear Jeff,

Merrimack Pharmaceuticals, Inc. ("Merrimack") is pleased to provide you a one-time retention bonus of $350,000 (the "Retention Bonus"), less all applicable taxes and withholdings. A portion of the Retention Bonus is considered an advance and is not earned unless you remain continuously employed and in good standing with Merrimack based on the following terms: (i) if you terminate your employment with Merrimack on or before December 31, 2017 without Good Reason (as defined in your Employment Agreement) or Merrimack terminates your employment on or before December 31, 2017 for Cause (as defined in your Employment Agreement), you shall be required to repay $233,333.33 of the Retention Bonus, minus any applicable taxes and withholdings that you were required to pay with respect to such amount, within 60 days after your termination, and (ii) if you terminate your employment with Merrimack on or after January 1, 2018 but on or before June 30, 2018 without Good Reason or Merrimack terminates your employment on or after January 1, 2018 but on or before June 30, 2018 for Cause, you shall be required to repay $116,666.67 of the Retention Bonus, minus any applicable taxes and withholdings that you were required to pay with respect to such amount, within 60 days after your termination, in each case, to the maximum extent permitted by applicable law. You shall not be required to repay any portion of the Retention Bonus if you terminate your employment with Merrimack at any time for Good Reason or if Merrimack terminates your employment at any time without Cause.

This letter contains all of the understandings and representations between Merrimack and you relating to the Retention Bonus and supersedes all prior understandings, representations and agreements with respect to any retention bonus payments. The opportunity for you to receive the Retention Bonus under the terms set forth in this letter shall not be construed as a guarantee of employment for any specific period of time, and your employment shall remain at-will.

We are excited to continue working with you. If the terms set forth in this letter are acceptable to you, please sign this letter and return it to me. If you have any questions do not hesitate to reach out.

Best regards,

/s/ Shelley Phelps
Shelley Phelps, Talent Team

Accepted and Agreed:

/s/ Jeffrey A. Munsie
Jeffrey A. Munsie

FIFTH AMENDMENT OF LEASE

This Fifth Amendment of Lease (this "**Fifth Amendment**") is made and entered into as of April 3, 2017 (the "**Effective Date**"), by and between **ARE-MA REGION NO. 59, LLC**, a Delaware limited liability company ("**Landlord**"), as successor-in-interest to DWF IV One Kendall, LLC, as successor-in-interest to RB Kendall Fee, LLC ("**Original Landlord**"), and **MERRIMACK PHARMACEUTICALS, INC.**, a Delaware corporation ("**Tenant**"), with reference to the following:

RECITALS

A. Pursuant to that certain Indenture of Lease dated as of August 24, 2012, as amended by (i) that certain First Amendment of Lease dated March 18, 2013, (ii) that certain Second Amendment of Lease dated September 12, 2013, (iii) that certain Third Amendment of Lease dated February 23, 2015, and (iv) that certain Fourth Amendment of Lease dated July 22, 2015 (as amended, the "**Lease**"), Tenant leases certain premises (the "**Existing Premises**") as more particularly described in the Lease, at the improved real property being Building 600/650/700 located at One Kendall Square, Cambridge, Massachusetts. The Existing Premises consists of approximately (a) 31,747 rentable square feet of space on a portion of the second (2nd) floor of Building 600/650/700 (the "**2nd Floor Space**"), (b) 4,773 rentable square feet of space on the fourth (4th) floor of Building 650/700 (the "**Additional Space**"), (c) 30,626 rentable square feet of space on the fourth (4th) floor of Building 600/700 (the "**4th Floor Space**"), (d) 7,245 rentable square feet of space on the mezzanine level of Building 700 (the "**Mezzanine Space**"), (e) 8,686 rentable square feet of space on the first (1st) floor of Building 600 (the "**1st Floor Space**"), (f) 132 rentable square feet in the basement of Building 700 (the "**Basement Premises**"), (g) 2,922 rentable square feet of space in the basement of Building 700 (the "**Storage Space**"), (h) 8,763 rentable square feet of space located on the fourth (4th) floor of Building 700 (the "**Expansion Space I**"), (i) 3,388 rentable square feet of space located on the fourth (4th) floor and the fourth (4th) floor mezzanine of Building 650 (the "**Expansion Space II**"), (j) 10,375 rentable square feet of space located on the fifth (5th) floor of Building 600 (the "**Expansion Space III**"), (k) 491 rentable square feet of space on the first (1st) floor of Building 700 (the "**Chemical Storage Space**"), (l) 8,155 rentable square feet of space located on the second (2nd) floor of Building 600 (the "**600 Expansion Space**"), (m) 784 rentable square feet of space located on the second floor (2nd) of Building 600 (the "**Hallway Space**"), (n) 3,617 rentable square feet of space located on the fifth (5th) floor of Building 600 (the "**Expansion Space IV**"), (o) 31,620 rentable square feet of space on the fifth (5th) floor of Building 600/650/700 (the "**Third Amendment Premises**"), (p) 7,145 rentable square feet of space on the first (1st) floor of Building 700 (the "**Former Addgene Space**"), (q) 5,687 rentable square feet of space on the first (1st) floor of Building 700 (the "**Former OmniGuide Space**"), (r) 311 rentable square feet of space on the basement level of Building 700 (the "**Equipment Room**"), and (s) 700 rentable square feet of storage space in the basement of Building 700 (the "**Fourth Amendment Storage Space**"). Capitalized terms used herein without definition shall have the meanings defined for such terms in the Lease.

B. Tenant desires to reduce the term of the Lease for a portion of the Existing Premises and surrender such portion of the Existing Premises to Landlord at the end of such reduced term, and Landlord is willing to shorten such term and accept such surrender of such portion of the Existing Premises.

NOW, THEREFORE, in consideration of the foregoing and of the mutual promises made herein, and for other good and valuable consideration the receipt of which is hereby acknowledged, Landlord and Tenant agree as follows:

1. **Reduction Space/Reduction Date**. Effective as of May 15, 2018 (the "**Reduction Date**"), Landlord and Tenant hereby terminate the Lease with respect to that certain portion of the Existing Premises containing approximately 29,157 rentable square feet of space, as more particularly described in Exhibit A attached hereto (the "**Reduction Space**", and the remainder of the Existing Premises is the "**Remaining Premises**"). The Reduction Space consists collectively of (a) a portion of the Third Amendment Premises in Building 700 containing approximately 21,912 rentable square feet, and (b) all of the Mezzanine Space, containing approximately 7,245

rentable square feet. Accordingly, from and after the Reduction Date, the rentable square footage of the Third Amendment Premises shall be reduced to 9,708 rentable square feet. The Reduction Space is depicted in Exhibit A attached hereto and incorporated herein for all purposes. Nothing herein shall affect or diminish Tenant's rights and obligations under the Lease with respect to the Remaining Premises from and after the Reduction Date. Notwithstanding the foregoing to the contrary, Tenant is currently negotiating a sublease agreement for all or a portion of the Reduction Space with a third party (the "**Reduction Space Sublease**"). Such Reduction Space Sublease shall be subject to Landlord's prior written consent thereof in accordance with the terms and conditions set forth in the Lease and shall expire prior to the Reduction Date. Tenant hereby agrees to notify Landlord upon the expiration or earlier termination of such Reduction Space Sublease. Upon such expiration or earlier termination of the Reduction Space Sublease Landlord, at its sole option and in its sole and absolute discretion, may elect to accelerate the Reduction Date with respect to all or a portion of the Reduction Space by giving Tenant at least ten (10) business days prior written notice thereof.

2. **Definition of Premises**. As of the Reduction Date, the defined term "Premises" in Article 2 of Exhibit 1, Sheet 1 of the Lease shall be amended to remove the Reduction Space, and the square footage of the Premises shall accordingly be reduced by 29,157 rentable square feet and shall thereafter consist of a total of 138,010 rentable square feet.

3. **Yearly Rent, Operating Costs, Taxes**. Commencing on the Reduction Date, Tenant shall have no further obligation to pay Yearly Rent, Operating Costs (including Building Operating Costs and Common Area Operating Costs), Taxes (including Building Taxes and Common Area Taxes) or other costs with respect to the Reduction Space and Article 9 of Exhibit 1, Sheet 1 of the Lease shall be amended to reflect the removal of the Reduction Space from the Existing Premises.

4. **Surrender**. Tenant shall voluntarily surrender the Reduction Space on or before the Reduction Date in accordance with all surrender requirements contained in the Lease and in the condition required under the Lease (as amended by this Fifth Amendment).

5. **No Further Obligations**. Landlord and Tenant each agree that the other is excused as of the Reduction Date from any further obligations with respect to the Reduction Space, excepting only such obligations under the Lease which expressly survive the termination of the Lease. In addition, nothing herein shall be deemed to limit or terminate any common law or statutory rights Landlord may have with respect to Tenant in connection with any Hazardous Materials or for violations of any governmental requirements or requirements of applicable law. Nothing herein shall excuse Tenant from its obligations under the Lease with respect to the Reduction Space prior to the Reduction Date.

6. **Removal of Personal Property**. Tenant agrees that the Reduction Space shall be surrendered free of all personal property of Tenant. Any personal property of Tenant remaining in the Reduction Space after the Reduction Date is hereby agreed to be abandoned by Tenant and may be disposed of by Landlord, in Landlord's sole discretion, without obligation or liability of any kind to Tenant.

7. **Landlord's Recapture Rights**. As of the Effective Date, Section 16(D) of the lease is hereby deleted in its entirety and of no further force or effect, and Landlord shall have no further right to recapture any portion of the Premises in connection with a proposed assignment of the Lease or sublease of all or a portion of the Premises pursuant to Section 16 of the Lease.

8. **Parking Spaces**. As of the Reduction Date, Tenant shall forfeit its rights to twenty-nine (29) of the parking passes in the OKS Garage that were allocated to Tenant under the Lease.

9. **OFAC**. Tenant and all beneficial owners of Tenant are currently (a) in compliance with and shall at all times during the Term of the Lease remain in compliance with the regulations of the Office

of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "OFAC Rules"), (b) not listed on, and shall not during the term of the Lease be listed on, the Specially Designated Nationals and Blocked Persons List, Foreign Sanctions Evaders List or the Sectoral Sanctions Identifications List, which are all maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

10. **Lender Consent Requirement**. Landlord and Tenant agree that this Fifth Amendment shall not be effective unless and until Landlord obtains consent to this Fifth Amendment from the lender that currently holds a mortgage secured by the Complex (the "**Lender**"). Landlord agrees to (a) use reasonable efforts to obtain Lender's consent to this Fifth Amendment as soon as reasonably possible following the full execution and delivery of this Fifth Amendment by Landlord and Tenant, (b) provide written notice to Tenant of Lender's approval or disapproval of this Fifth Amendment promptly following Landlord's receipt of such written approval or disapproval from Lender, and (c) if Lender disapproves of this Fifth Amendment, to make such changes as are reasonably required by Lender for its approval of this Fifth Amendment and which are reasonably agreed to by each party to this Fifth Amendment in order to effect the intent of this Fifth Amendment to the extent possible.

11. **Miscellaneous**.

a. This Fifth Amendment is the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions. This Fifth Amendment may be amended only by an agreement in writing, signed by the parties hereto.

b. This Fifth Amendment is binding upon and shall inure to the benefit of the parties hereto, and their respective successors and assigns.

c. This Fifth Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this Fifth Amendment attached thereto.

d. Except as amended and/or modified by this Fifth Amendment, the Lease shall remain in full force and effect. In the event of any conflict between the provisions of this Fifth Amendment and the provisions of the Lease, the provisions of this Fifth Amendment shall prevail. Whether or not specifically amended by this Fifth Amendment, all of the terms and provisions of the Lease are hereby amended to the extent necessary to give effect to the purpose and intent of this Fifth Amendment.

e. Signatures to this Fifth Amendment transmitted via electronic mail (*.pdf or similar file types) shall be valid and effective to bind the party so signing. Tenant agrees to promptly deliver to Landlord an execution original to this Fifth Amendment with the actual signature of Tenant, but a failure by Tenant to do so shall not affect the enforceability of this Fifth Amendment, it being expressly agreed that each party to this Fifth Amendment shall be bound by its own electronically mailed signature in all instances and shall accept the electronically mailed signature of the other parties to this Fifth Amendment.

SIGNATURES ON FOLLOWING PAGE

IN WITNESS WHEREOF, the parties have executed this Fifth Amendment as of the date first written above.

TENANT:

MERRIMACK PHARMACEUTICALS, INC.,
a Delaware corporation

By: /s/ Jeffrey A. Munsie
Its: General Counsel

LANDLORD:

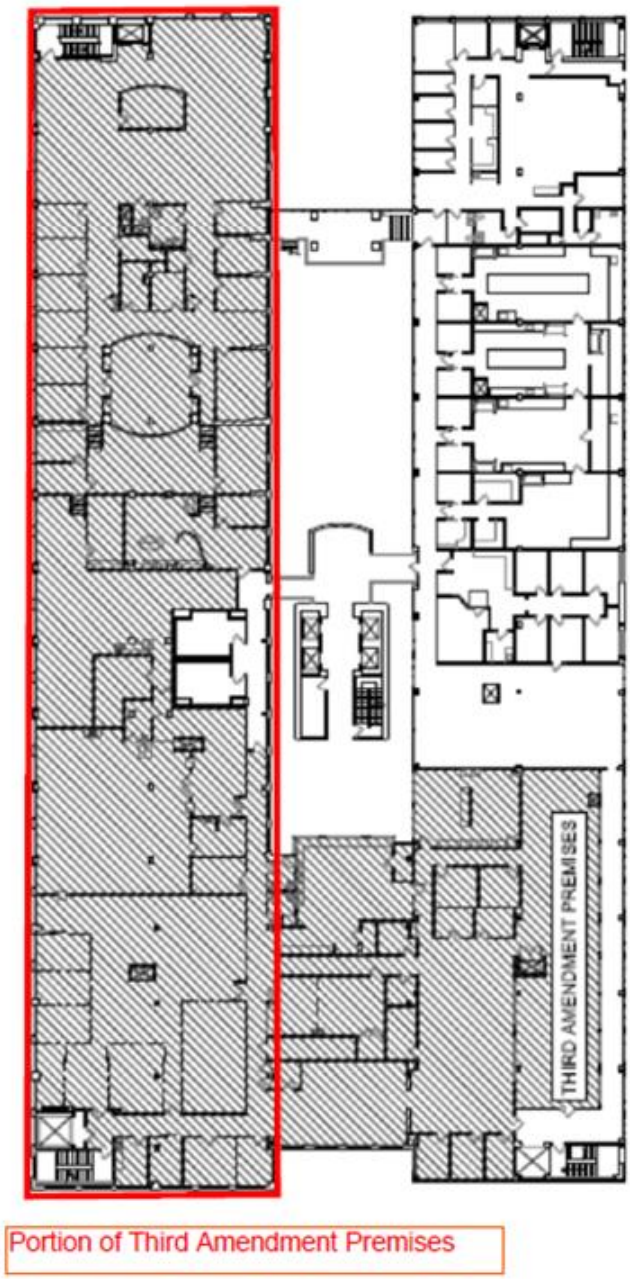
ARE-MA REGION NO. 59, LLC,
a Delaware limited liability company.

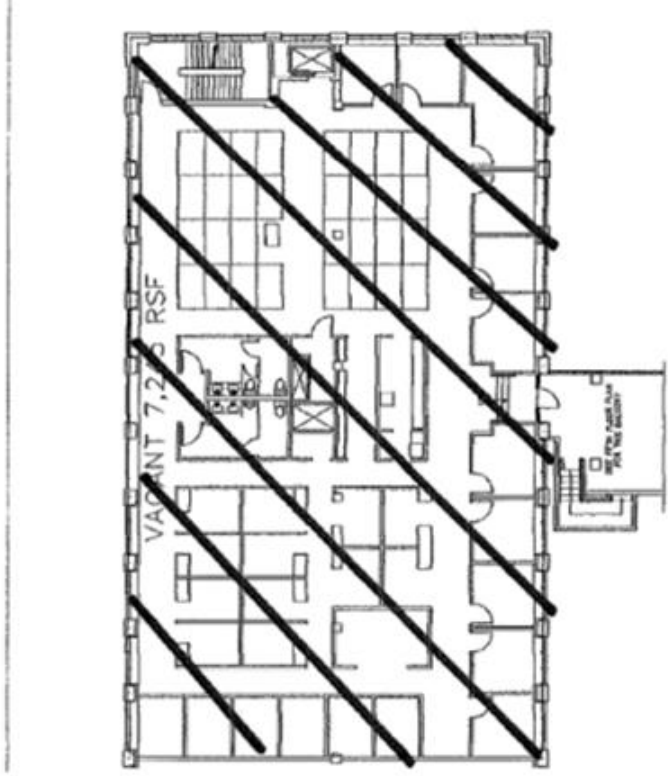
By: Alexandria Real Estate Equities, L.P.,
a Delaware limited partnership,
managing member

By: ARE-QRS CORP.,
a Maryland Corporation,
general partner

By: /s/ Eric Johnson
Its: Senior Vice President, RE Legal Affairs

EXHIBIT A
Reduction Space





Mezzanine Space

Exhibit 10.9

SUBLEASE AGREEMENT

This Sublease Agreement ("**Sublease**"), dated as of April 3, 2017 (the "**Effective Date**"), is by and between **MERRIMACK PHARMACEUTICALS, INC.**, a Delaware corporation, having a mailing address at One Kendall Square, Suite B7201, Cambridge, MA 02139 ("**Sublandlord**"), and **IPSEN BIOSCIENCE, INC.**, a Massachusetts corporation, domiciled at 650 East Kendall Street, Cambridge, MA 02142 ("**Subtenant**").

WHEREAS, Sublandlord is the tenant under that certain Indenture of Lease dated August 24, 2012 (the "**Original Lease**"), by and between **ARE-MA Region No. 59, LLC** (as successor to DWF IV ONE KENDALL, LLC**,** a Delaware limited liability company, who is in turn the successor to RB KENDALL FEE, LLC, a Delaware limited liability company) ("**Prime Landlord**") and Sublandlord, as amended by that certain First Amendment of Lease dated March 18, 2013 (the "**First Amendment**"), Second Amendment of Lease dated September 12, 2013 (the "**Second Amendment**"), Third Amendment of Lease dated February 23, 2015 (the "**Third Amendment**"), Fourth Amendment of Lease dated July 22, 2015 (the "**Fourth Amendment**") and Fifth Amendment of Lease dated April 3, 2017 (the "**Fifth Amendment**" and collectively with the Original Lease, the First Amendment, the Second Amendment, the Third Amendment and the Fourth Amendment, and as may be further amended, the "**Primary Lease**"); and

WHEREAS, pursuant to the Primary Lease, Sublandlord leases certain premises located in Buildings 600/650/700 (the "**Building**") at One Kendall Square, Cambridge, MA 02139, as more particularly described in the Primary Lease (the "**Demised Premises**"), consisting of approximately 163,102 rentable square feet (excluding basement and storage space); and

WHEREAS, Sublandlord desires to sublease a portion of the Demised Premises to Subtenant together with the non-exclusive right to use certain common areas made available to Sublandlord under the Primary Lease, and Subtenant desires to sublease a portion of the Demised Premises from Sublandlord, in accordance with the terms and conditions of this Sublease.

NOW, THEREFORE, in consideration of the mutual covenants, terms and conditions set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Demise. Sublandlord hereby leases to Subtenant, and Subtenant hereby leases from Sublandlord, for the Term (defined in Section 2(a) below) and upon the conditions

hereinafter provided, that portion of the Demised Premises comprising approximately 70,237 rentable square feet located in the Building (the "**Subleased Premises**"), as depicted and as further described on the floor plans attached hereto as Exhibit A.

2. Term.

(a) The term of this Sublease ("**Term**") shall commence on the Effective Date and shall expire at midnight on June 30, 2019 ("**Sublease Expiration Date**"), unless sooner terminated in accordance with the terms and conditions of this Sublease.

(b) In the event that Sublandlord shall, in its sole discretion, exercise its option to extend the term of the Primary Lease (per section 29.14 of the Primary Lease), Sublandlord shall deliver to Subtenant a copy of the Extension Notice delivered to Prime Landlord. Provided that Subtenant is not in default of any of its obligations under this Sublease beyond applicable notice and cure periods, Subtenant shall have the option to extend the Term of this Sublease for such additional period as indicated in the Extension Notice (the "**Extended Term**") by giving Sublandlord written notice no later than 60 days after receipt from Sublandlord of a copy of the Extension Notice. The final date of the Term as extended by this Section 2(b) shall be deemed to be the new Sublease Expiration Date.

(c) Without limiting Subtenant's rights set forth in Section 2(b) hereof, Subtenant shall not be entitled to exercise any options to extend or renew the term of the Primary Lease. These options are expressly retained by Sublandlord and may be exercised or waived by Sublandlord in its sole and absolute discretion.

(d) If for any reason the term of the Primary Lease is terminated prior to the Sublease Expiration Date, this Sublease shall terminate on the date of such termination and Sublandlord and Subtenant shall thereupon be relieved of all liability and obligation hereunder, except (i) liabilities and obligations which accrued or arose prior to the date of such termination or expiration, (ii) liabilities and obligations relating to any breach hereof or default hereunder prior to said date (which shall include, but not be limited to, a breach of or default under Section 8(b) hereof), and (iii) subject to the foregoing, Sublandlord shall return to Subtenant that portion of the Rent (as hereinafter defined) paid in advance by Subtenant, if any, prorated as of the date of such termination. In the event that the termination of the Primary Lease described in this Section 2(d) was caused solely by Sublandlord's default under the Primary Lease (excluding defaults in the performance or observance of any obligations delegated to Subtenant pursuant to this Sublease) or a voluntary termination (other than a voluntary termination following a casualty or condemnation as permitted in the Primary Lease and referred to in Section 8(b)(ii) hereof), then, without limiting Subtenant's rights set forth in subparagraph (ii) above, Sublandlord shall provide reasonable assistance to Subtenant in pursuing a direct lease with Prime Landlord for the Subleased Premises, pursuant to Section 14 hereof.

(e) To the extent that Sublandlord has received written notice of any termination or threatened termination of the Primary Lease or otherwise has actual knowledge that the Primary Lease will be terminated prior to the Sublease Expiration Date, Sublandlord shall promptly provide written notice to Subtenant.

3. Permitted Use. Subtenant shall use and occupy the Subleased Premises solely in accordance with, and for any purpose that is permitted under, the terms of the Primary Lease and for no other purpose.

4. Payment of Base Rent and Additional Rent.

(a) Subject to Section 9(b) below, Subtenant agrees to pay base rent ("**Base Rent**") for the use and occupancy of the Subleased Premises in an amount equal to the Yearly Rent (as defined in the Primary Lease) required to be paid by Sublandlord as tenant under the Primary Lease for the Subleased Premises as set forth on Schedule 1 hereto. Base Rent is triple net.

(b) Base Rent for any Extended Term shall be equal to the Yearly Rent required to be paid by Sublandlord as tenant under the Primary Lease for the Subleased Premises for the Extended Term (which shall include any retroactive payment Sublandlord is required to pay to Prime Landlord pursuant to Section 29.15(B) in the event the Yearly Rent for such Extended Term is not determined until a date later than the commencement of the Extended Term).

(c) Base Rent shall be paid in equal monthly installments in advance, on the first (1st) day of each calendar month during the Term of the Sublease, except that the first monthly installment of Base Rent shall be paid by Subtenant to Sublandlord at the time of execution and delivery of this Sublease.

(d) In addition to Base Rent, commencing on the Effective Date and continuing throughout the Term, Subtenant shall pay to Sublandlord the following: (i) the Subtenant's Pro Rata Share (as defined below) of all amounts required to be paid under the Primary Lease, other than the "Yearly Rent", on account of Operating Costs (including Building Operating Costs and Common Area Operating Costs) and Taxes (including Building Taxes and Common Area Taxes); (ii) utilities billed to or paid by Sublandlord under the Primary Lease to the extent relating solely to the Subleased Premises and not otherwise paid directly by Subtenant or through Subtenant's Pro Rata Share of Operating Costs and Taxes; (iii) any other costs and expenses incurred or payable by Sublandlord attributable solely to the Subleased Premises due to Subtenant's activity in the Subleased Premises which are not paid directly by Subtenant or through Subtenant's Pro Rata Share of Operating Costs and Taxes, provided, however, Subtenant shall not be responsible for the cost of any additional charge for services unless such services were provided to the Subleased Premises at Subtenant's request; and (iv) monthly parking payment, as described in Section 21 below (all the foregoing amounts

plus any other amounts payable by Subtenant hereunder are collectively referred to as "**Additional Rent**" and together with the Base Rent, the "**Rent**"). The "**Subtenant's Pro Rata Share**" is the quotient derived by dividing the rentable square footage of the Subleased Premises by that of the Building or the Complex, as applicable, and approximately equates to: (i) for amounts applicable to the Building, 29.0% (derived by dividing the rentable square footage of the Subleased Premises (70,237) by that of the Building (242,236) (the "**Building Share**")), and (ii) for amounts applicable to the Common Area, 11.0% (derived by dividing the rentable square footage of the Subleased Premises (70,237) by that of the Complex (639,586) (the "**Common Area Share**")). The Subtenant's Pro Rata Share shall be subject to equitable adjustment to account for any changes to the applicable square footages.

(e) Except as otherwise set forth herein, all Rent shall be due and payable without demand therefor unless otherwise designated by Sublandlord and, unless expressly set forth herein, without any deduction, offset, abatement, counterclaim or defense. The monthly installments of Rent payable on account of any partial calendar month during the Term of this Sublease, if any, shall be prorated.

(f) The Additional Rent described in Section 4(d)(i) shall be based on the projected Operating Costs and Taxes calculated by the Prime Landlord under the Primary Lease. The Additional Rent described in Section 4(d)(i) and 4(d)(iv) shall be payable to Sublandlord in equal monthly installments on the same schedule as payment of the Base Rent; all other Additional Rent shall be paid to Sublandlord within twenty (20) days after Sublandlord's written request therefor. Payments for any partial years shall be equitably prorated. Promptly after receipt by Sublandlord of any Tax or Operating Cost statement from the Prime Landlord, Sublandlord shall deliver a comparable statement to Subtenant, together with copies of any relevant statements and tax bills, if any, received by Sublandlord from Prime Landlord, setting forth the actual amount of Subtenant's Pro Rata Share of Operating Costs and Taxes. Any resulting difference between amounts paid by Subtenant pursuant to Section 4(d)(i) above and the actual Subtenant's Pro Rata Share of such expenses during the applicable period shall promptly be equitably trued up by the parties, whether by additional payment owed to Sublandlord or by refund owed to Subtenant, which shall be issued as a credit against the next monthly installment of Rent then due and payable or as a reimbursement if determined after the end of the Term. In the event that Subtenant disputes the correctness of any such accounting, Subtenant shall notify Sublandlord thereof and Subtenant shall have the right to request such additional information from Sublandlord as is reasonably necessary to verify the correctness of Subtenant's Pro Rata Share of Operating Costs and Taxes. If it is determined that Sublandlord overstated Subtenant's Pro Rata Share, Sublandlord shall credit such overstatement against the monthly installments of Rent next due and payable under this Sublease (or refund such amount if the Term has ended); similarly, if it is determined that Sublandlord understated Subtenant's Pro Rata Share, Subtenant shall pay such

understatement together with the monthly installment next due and payable under this Sublease (or as a cash payment if the Term has ended).

(g) Subtenant shall not be responsible for any penalties, interest or other costs incurred by Sublandlord under the Primary Lease that are caused by (i) Sublandlord's failure to pay rent to Prime Landlord in a timely manner in accordance with the Primary Lease, unless such failure is caused by Subtenant's default or failure to make timely payments to Sublandlord in accordance with this Sublease, or (ii) a breach of the Primary Lease or this Sublease by, or the acts or negligence of Sublandlord or its agents, representatives, sublessees, employees or invitees (except to the extent such breach, negligence or acts were caused by Subtenant or its agents, representatives, sublessees, employees or invitees).

(h) If Sublandlord shall receive a refund or credit of any Additional Rent amounts from Prime Landlord pursuant to the terms of the Primary Lease, Sublandlord shall promptly notify Subtenant thereof and shall, within ten (10) days after receipt of such refund or credit, refund or credit to Subtenant the applicable portion thereof, if any, constituting amounts paid by Subtenant to Sublandlord (or directly by Subtenant to Prime Landlord) hereunder.

(i) If Subtenant fails to pay any installment of Rent within five (5) days after the due date of such payment, Subtenant shall pay to Sublandlord, as Additional Rent, interest at the Default Rate (hereinafter defined) from the due date of such payment to the date payment is made. "**Default Rate**" shall mean a rate per annum equal to the lesser of: (i) 5% in excess of the prime rate then currently charged to customers of the largest national bank (N.A.) located within Boston on the due date of such Base Rent or Additional Rent; and (ii) the highest rate of interest permitted by applicable laws.

5. Security Deposit.

(a) Within fifteen (15) business days of the execution and delivery of this Sublease, Subtenant shall deposit with Sublandlord a security deposit ("**Security Deposit**") in the amount of Two Hundred Seventy Five Thousand and Forty Five Dollars ($275,045) as security for the full and faithful performance by Subtenant of Subtenant's obligations hereunder. The Security Deposit may be in the form of cash or a clean, stand-by, irrevocable letter of credit, in form and substance and issued by and drawn on a bank reasonably satisfactory to Sublandlord.

(b) In the event that Subtenant is in default of its obligations under the Sublease, which default continues beyond the applicable notice and cure period, then the Sublandlord shall have the right, at any time after such event, without giving any further notice to Subtenant, to draw down from said Security Deposit (a) the amount necessary to cure such default or (b) if such default cannot reasonably be cured by the expenditure of money, the amount which, in Sublandlord's reasonable opinion, is necessary to satisfy

Subtenant's liability on account thereof. In the event of any such draw by the Sublandlord, Subtenant shall, within fifteen (15) business days of written demand therefor, deliver to Sublandlord additional funds to restore the Security Deposit to its original amount. In addition, in the event of a termination of this Sublease based upon the default of Subtenant, or a rejection of the Sublease pursuant to the provisions of the Federal Bankruptcy Code (in connection with Subtenant's bankruptcy), Sublandlord shall have the right to draw upon the Security Deposit (from time to time, if necessary) to cover the full amount of damages and other amounts due from Subtenant to Sublandlord under the Sublease. Any amounts so drawn shall, at Sublandlord's election, be applied first to any unpaid rent and other charges which were due prior to the filing of the petition for protection under the Federal Bankruptcy Code. Subtenant hereby covenants and agrees not to oppose, contest or otherwise interfere with any attempt by Sublandlord to draw down from said Security Deposit in accordance with this Section 5(b) including, without limitation, by commencing an action seeking to enjoin or restrain Sublandlord. Subtenant also hereby expressly waives any right or claim it may have to seek such equitable relief in such an instance. In addition to whatever other rights and remedies Sublandlord may have against Subtenant, if Subtenant breaches its obligations under this paragraph, Subtenant hereby acknowledges that it shall be liable for any and all damages which Sublandlord may actually suffer as a result of any such breach.

(c) Upon request of Sublandlord or any (prospective) purchaser or mortgagee of the Building, Subtenant shall, at its expense, reasonably cooperate with Sublandlord in obtaining an amendment to or replacement of any letter of credit which Sublandlord is then holding so that the amended or new letter of credit reflects the name of the new owner of the Building.

(d) To the extent that Sublandlord has not previously drawn upon the Security Deposit and to the extent that Subtenant is not otherwise in default of its obligations under the Sublease as of the termination date of the Sublease, Sublandlord shall return same to Subtenant within thirty (30) days after the later of (i) the termination of the Term and (ii) Subtenant's vacation of the Subleased Premises.

6. Primary Lease.

(a) Subtenant hereby covenants to perform the covenants and undertakings of "Tenant" under the Primary Lease and to abide by the terms of the Primary Lease to the extent the same are applicable to the Subleased Premises during the term of this Sublease, and shall not do or permit to be done any act which shall result in a violation of any of the terms and conditions of the Primary Lease, including, without limitation, complying with the use provisions set forth in Section 5 of the Primary Lease, insurance and indemnity provisions set forth in Section 15 of the Primary Lease and the hazardous material provisions set forth in Section 29.11 of the Primary Lease. Subject to Section 12 hereof, Subtenant acknowledges and agrees that performance by Sublandlord of its obligations hereunder are conditioned upon due performance by Prime Landlord of its corresponding

obligations under the Primary Lease and that Sublandlord shall not be in default under this Sublease for failure to render services or to perform obligations that are the responsibility of the Prime Landlord under the Primary Lease except as otherwise set forth herein. Sublandlord shall have all of the rights and privileges of the Prime Landlord under the Primary Lease as against Subtenant and, as between the parties hereto, Subtenant agrees to observe and perform all of the terms, covenants and conditions on Sublandlord's part to be observed and performed under the Primary Lease incorporated herein and applicable to the Subleased Premises. As between Sublandlord and Subtenant, subject to Section 6(b) hereof, Subtenant shall be entitled to all of the rights and privileges of the Sublandlord as tenant under the terms of the Primary Lease as and to the extent expressly incorporated by reference into this Sublease and solely with respect to the Subleased Premises.

(b) Provisions of the Primary Lease which do not directly or indirectly pertain to the Subleased Premises or which are expressly addressed within provisions of this Sublease shall not apply to this Sublease, and, in any case, the following numbered paragraphs of the Primary Lease shall not apply to this Sublease: Exhibit 1, Sheet 1 and Sections 4.1(a)(1) and (2); 4.1(c); 4.2(B),(C),(D) and (F); 4.4; 4.5; 8.1(b) and (c); 9.7; the third sentence of 14.1, 29.13, 29.14 (except as applicable to Section 2(b) hereof), 29.15, 29.16; 29.19 (except as applicable to Section 21 hereof); 29.20 of the Original Lease; the First Amendment; the Second Amendment; the Third Amendment (except for Schedule 1) and Sections 1, 3, 4, 5, 6, 9, 10, 12 and 13 of the Fourth Amendment. In addition, the time limits contained in the Primary Lease for Sublandlord, as "Tenant", to give notices, make demands or perform any act, covenant or condition or to exercise any right, remedy or option, are, as applied to Subtenant, modified herein by shortening the same in each instance by three (3) days. In case such time limits in the Primary Lease are for less than seven (7) days, those time limits are instead modified herein by shortening the same by two (2) business days; provided, however, in no event shall the time limits imposed be less than one (1) business day.

7. Subordination to Primary Lease.

This Sublease is subject and subordinate to the Primary Lease. A redacted copy of the Primary Lease is attached hereto as Exhibit B.

8. Representations, Warranties and Covenants of Sublandlord.

(a) Sublandlord represents and warrants the following is true and correct as of the date hereof:

(i) Sublandlord is the tenant under the Primary Lease, has the capacity to enter into this Sublease with Subtenant, and has obtained Prime Landlord's consent to this Sublease.

(ii) The Primary Lease attached hereto as Exhibit B is a true, correct and complete copy of the Primary Lease, is in full force and effect, and has not been further modified, amended or supplemented except as expressly set forth herein.

(iii) Sublandlord has not received any written notice, and has no actual knowledge, of any default, or any condition which, with the giving of notice or passage of time, would give rise to a default, by Sublandlord or Prime Landlord under the Primary Lease.

(iv) Sublandlord has not received any written notice that any work is required under the Primary Lease or by applicable law to be done in the Subleased Premises.

(v) Sublandlord has not received any written notice that the Subleased Premises are in violation of any applicable laws, ordinances, codes, rules or regulations.

(vi) Sublandlord has the right to sublease to Subtenant the Subleased Premises.

(b) Sublandlord covenants and agrees that so long as Subtenant is not in default hereunder, Sublandlord:

(i) shall observe and perform the terms, provisions, covenants, and conditions of the Primary Lease to be observed and performed by Sublandlord, except to the extent that such terms, provisions, covenants, and conditions are Subtenant's responsibility hereunder; and

(ii) shall not cause the Primary Lease to terminate, except pursuant to a right of termination arising out of casualty or condemnation expressly set forth in the Primary Lease (provided that nothing herein shall require Sublandlord to exercise any extension option under the Primary Lease); and

(iii) shall not amend the Primary Lease in a manner that is more adverse to the Subleased Premises than to the entirety of the Demised Premises or which denies Subtenant the right to use and occupy the Subleased Premises for the purpose and as provided under this Sublease.

9. AS-IS Condition; Decommissioning.

(a) Subject to Section 9(c), as of the Effective Date, the Subleased Premises shall be delivered to Subtenant in broom clean, "as-is" condition and free of all personal property not otherwise being transferred or temporarily consigned to Subtenant in connection with Subtenant's acquisition of certain aspects of Sublandlord's business. Subject to Section 9(b), Sublandlord shall have no obligation to furnish or supply any

work, services, furniture, fixtures, equipment or decorations or to prepare the same for Subtenant's occupancy or to pay any allowances therefor.

(b) By the dates set forth below in this paragraph, Sublandlord, at its sole cost and expense, shall deliver to Subtenant a decommissioning report evidencing that the laboratories approximated on Exhibit C hereto (the "**Former Labs**") have been decommissioned in accordance with applicable laws and the standards set by the American National Standards Institute ("**ANSI**") in Publication "Z9.11-2016 Laboratory Decommissioning" or any successor standards published by ANSI, and which report shall also include the radiation decommissioning of the Subleased Premises as required per Section 29.11(f)(1) of the Primary Lease (the "**Decommissioning Report(s)**"). Subtenant shall permit reasonable access to the Former Labs for Sublandlord and its service providers to complete the Decommissioning Reports, provided that such access shall be subject to adherence to Subtenant's reasonable requirements for access by third parties, and provided, further, that Sublandlord, its agents, employees, or contractors shall use reasonable efforts to minimize any interference with Subtenant's operations within the Subleased Premises during any access. The deadline for completion of the Decommissioning Report for the laboratories on the "blue" side of the 4th Floor Space in Building 700 (the "**Blue Labs**", approximated on Exhibit C-1) is May 15, 2017. The deadline for completion of the Decommissioning Reports for the laboratory on the "orange" side of the 4th floor in Building 700 and the "upstream" process development laboratories in the 4th Floor Space in Building 600 (all as approximated on Exhibit C-2) is June 15, 2017. Pending delivery of the required Decommissioning Reports covering the laboratories comprising the Former Labs, Rent on the Former Labs shall be adjusted, prorated daily and on a laboratory-by-laboratory basis, as follows: (a) from the Effective Date until the relevant deadline for the Decommissioning Report, Ipsen shall be obligated to pay 50% of the Rent that would otherwise be due on each laboratory for which the relevant Decommissioning Report has not been delivered; (b) from the deadline for the Decommissioning Report until delivery of the relevant Decommissioning Report, Ipsen shall not be obligated to pay Rent that would otherwise be due on each laboratory for which the relevant Decommissioning Report has not been delivered; and (c) notwithstanding (a) and (b), from the date of delivery of the Decommissioning Report covering any of the relevant laboratories for which a Decommissioning Report is required, whether before or after the deadline for such report, Ipsen's obligation to pay full Rent on each such laboratory shall resume. For purposes of the Rent adjustment described in the preceding sentence, the parties have agreed on the approximate square footage of each of the Former Labs as indicated on Exhibit C; the parties may agree to verify such square footages within thirty (30) days following the Effective Date. Square footage of the Former Labs will be calculated in accordance with the American National Standard Method of Measuring Floor Area in Office Buildings, ANSI/BOMA Z65.1-2010.

(c) Notwithstanding Section 9(a), Sublandlord shall be permitted to keep laboratory furniture, equipment and materials in the Former Labs beyond the Effective Date. Sublandlord shall, at its sole cost and expense, remove such laboratory furniture, equipment and materials as soon as reasonably possible following the Effective Date, but in no event later than April 30, 2017. Subtenant shall permit reasonable access to the Former Labs for Sublandlord and its service providers to complete its removal of such laboratory furniture, equipment and materials, provided that such access shall be subject to adherence to Subtenant's reasonable requirements for access by third parties, provided, further, that Sublandlord, its agents, employees, or contractors shall use reasonable efforts to minimize any interference with Subtenant's operations within the Subleased Premises during any access. Sublandlord shall, at its sole cost and expense, repair any damage resulting from the removal of Sublandlord's laboratory furniture, equipment and materials.

10. Leasehold Improvements.

Without limiting any other provisions of this Sublease, Subtenant shall obtain Sublandlord's prior written consent for all leasehold improvements to the Subleased Premises ("**Subtenant's Work**") and in connection with such approval shall submit to Sublandlord all Plans and Specifications (as defined below) therefor, and the names of all contractors, engineers, architects, technicians and mechanics effecting same. Sublandlord's prior consent shall not be unreasonably withheld, conditioned or delayed, and, if required under the Primary Lease, shall be further subject to the prior written consent of the Prime Landlord. All Subtenant's Work shall be completed in accordance with the terms and conditions of this Sublease and the Primary Lease. Subtenant shall be responsible for the preparation of construction plans and specifications, including but not limited to architectural, mechanical, electrical, plumbing, life-safety and other building systems and interfaces therewith (collectively, the "**Plans and Specifications**"), and any specialty engineering necessary for the completion of Subtenant's Work. All third-party out-of-pocket costs for reviewing and approving the Plans and Specifications incurred by Sublandlord and, to the extent Sublandlord or Subtenant receives an invoice relating thereto from Prime Landlord, by Prime Landlord, in connection with Subtenant's Work, shall be deemed Additional Rent hereunder and due promptly following delivery of detailed invoices for same to Subtenant. Without limitation, Sublandlord may condition its consent on Subtenant's delivery of customary insurance and indemnities from Subtenant and its contractors.

11. End of Term.

Upon the expiration or other termination of this Sublease, Subtenant shall peaceably quit and surrender to Sublandlord the Subleased Premises and all alterations and additions thereto made by Subtenant, broom clean, in the same order, repair and condition which Sublandlord is required to maintain such premises pursuant to the

Primary Lease. Subtenant shall not be required to remove or restore any alterations or improvements that were made by Subtenant as a part of Subtenant's Work except to the extent that Prime Landlord has provided written notice in advance (at the time the Subtenant's Work is approved) that such Subtenant's Work be removed. On or before the Sublease Expiration Date, Subtenant shall remove all of its personal property and shall repair any damages to the Subleased Premises or the Building caused by the removal thereof or of any other systems or infrastructure installed by Subtenant. On or before the Sublease Expiration Date or earlier termination or expiration of this Sublease, all laboratory space shall be returned to Sublandlord appropriately decontaminated and decommissioned (with applicable reports delivered to Sublandlord) and in the same good working order and condition as they were on the Effective Date, reasonable wear and tear, fire or other casualty excepted. The obligations of Subtenant hereunder shall survive the expiration or earlier termination of this Sublease.

12. Performance By Sublandlord.

Notwithstanding any other provision of this Sublease, Sublandlord shall have no obligation (a) to furnish or provide, or cause to be furnished or provided, any repairs, restoration, alterations or other work, or electricity, heating, ventilation, air-conditioning, water, elevator, cleaning or other utilities or services, or (b) to comply with or perform or, except as expressly provided in this Sublease, to cause the compliance with or performance of, any of the terms and conditions required to be performed by Prime Landlord pursuant to the terms of the Primary Lease; provided, however, that Subtenant shall expressly be afforded the rights and remedies set forth in Section 8.6 of the Primary Lease with respect to the Subleased Premises but only to the extent that Sublandlord has first been afforded such rights and remedies by Prime Landlord. Subtenant hereby agrees that Prime Landlord is solely responsible for the performance of the foregoing obligations. Notwithstanding the foregoing, upon the written request of Subtenant, Sublandlord shall make a written demand upon Prime Landlord to perform its obligations under the Primary Lease with respect to the Subleased Premises if Prime Landlord fails to perform same within the time frame and in the manner required pursuant to the Primary Lease; provided that Subtenant shall reimburse Sublandlord for any and all reasonable out of pocket costs and expenses (including reasonable out of pocket attorneys' fees) actually incurred by Sublandlord in connection therewith. If Subtenant is not permitted to do so independently, Sublandlord, at Subtenant's sole cost and expense, agrees upon written request from Subtenant to promptly exercise commercially reasonable efforts to pursue all remedies available to Sublandlord under the Primary Lease as requested by the Subtenant.

13. No Privity of Estate; No Privity of Contract.

Nothing in this Sublease shall be construed to create privity of estate or privity of contract between Subtenant and Prime Landlord.

14. No Breach of Primary Lease.

Neither Sublandlord nor Subtenant shall do or permit to be done any act or thing, or omit to do anything, which constitutes a breach or violation of any term, covenant or condition of the Primary Lease, notwithstanding such act, thing or omission is permitted under the terms of this Sublease.

During the Term, nothing in this Sublease shall prohibit Subtenant from negotiating directly with the Prime Landlord for a direct lease for the Subleased Premises which shall be effective upon the expiration or early termination of the Term, and upon Subtenant's request, Sublandlord shall reasonably cooperate in good faith with, and reasonably assist Subtenant, at Subtenant's expense, in Subtenant's efforts to obtain a direct lease from the Prime Landlord for the Subleased Premises.

15. Defaults.

(a) If Subtenant fails to cure a default under this Sublease within any applicable grace or cure period contained in the Primary Lease (including any applicable grace and cure periods set forth in Section 21.7 of the Original Lease, and as any such applicable grace or cure period is modified by Section 6 herein), Sublandlord, after ten (10) days' notice to Subtenant, shall have the right, but not the obligation, to seek to remedy any such default on the behalf of, and at the expense of, Subtenant, provided, however, that in the case of: (i) a life safety or property related emergency; or (ii) a default which must be cured within a time frame set forth in the Primary Lease which does not allow sufficient time for prior notice to be given to Subtenant, Sublandlord may remedy any such default without being required first to give notice to Subtenant. Any reasonable out of pocket cost and expense (including without limitation reasonable out of pocket attorneys' fees and expenses) so incurred by Sublandlord shall be deemed Additional Rent and shall be due and payable by Subtenant to Sublandlord within twenty (20) days after notice from Sublandlord.

(b) If Sublandlord defaults under any of the material terms or provisions of this Sublease and does not seek to cure the same within a period of thirty (30) days after written notice from Subtenant that such a default exists, or within a reasonable period of time thereafter if such default cannot reasonably be cured within thirty (30) days, then Subtenant may seek to cure such breach in any manner, or exercise any remedy, in each case which is provided by law, in equity, or under this Sublease (including, but not limited to, the right of specific performance, damages, or mandamus). All reasonable and necessary sums expended by Subtenant to cure any such defaults of Sublandlord shall be payable within twenty (20) days after demand and presentation of supporting documentation to Subtenant by Sublandlord. If Sublandlord fails to reimburse Subtenant within such twenty (20) day period, then in addition to any other remedies that Subtenant

may have in law or in equity, Subtenant may deduct such amounts from subsequent installments of Rent due to Sublandlord under this Sublease.

16. Consents.

Whenever the consent or approval of Sublandlord is required, Subtenant shall also be obligated to obtain the written consent or approval of Prime Landlord, if required pursuant to the terms of the Primary Lease. Sublandlord shall make such consent request to Prime Landlord on behalf of Subtenant and Subtenant shall provide any information or documentation that Prime Landlord is entitled to request under the Primary Lease. Subject to the limitations set forth in this Sublease, Subtenant shall reimburse Sublandlord, not later than twenty (20) days after written demand by Sublandlord, for any fees and disbursements of attorneys, architects, engineers or others charged by Prime Landlord in connection with any consent or approval requested by Subtenant. Sublandlord shall have no liability to Subtenant for Prime Landlord's failure to give its consent or approval. Sublandlord shall promptly notify Subtenant when Prime Landlord has agreed or declined to provide any such consent.

17. Right to Additional Space. Should Sublandlord determine that it no longer requires the use of any portions of the Demised Premises which it then leases from Prime Landlord, then Sublandlord shall not enter into any binding agreement to sublease such space to any unaffiliated third party without first offering, in writing, to sublease such space to Subtenant at then market terms for such space. Subtenant shall have ten (10) days to elect to exercise its right to sublease the entirety of such space after receiving written notice from Sublandlord, and upon such election the parties will promptly enter into an amendment to this Sublease on mutually agreeable terms (subject to Prime Landlord's prior written consent, as applicable). If Subtenant fails to exercise its right to additional space within the time period set forth above, then Sublandlord shall have the right to sublease such space or any portion thereof to any third party on terms that are not materially more favorable to the sublessee than those offered to Subtenant. Notwithstanding the foregoing, Subtenant's right described in this Section 17 shall not apply to the 5th floor of the Building.

18. Assignment or Subletting.

Subtenant shall not sublet all or any portion of the Subleased Premises or assign, encumber, mortgage, pledge or otherwise transfer this Sublease (by operation of law or otherwise) or any interest therein, without the prior written consent of: (a) Prime Landlord, if required under any the Primary Lease, or (b) Sublandlord, not to be unreasonably withheld, conditioned or delayed, provided that Sublandlord's consent shall not be required for assignment or sublease of the Subleased Premises, or any portion thereof, by Subtenant to a Permitted Transferee of Subtenant, as described in Section 16 of the Primary Lease.

19. Holdover; Indemnity; Insurance.

(a) Any holding over by Subtenant beyond the expiration date of this Sublease shall be deemed unlawful unless expressly consented to by Sublandlord in writing. In the event of any such holding over by Subtenant, Subtenant shall pay to Sublandlord all rental and other charges due to Prime Landlord pursuant to Section 22 of the Primary Lease and Sublandlord shall be entitled to any and all remedies in law or in equity by reason of such unlawful holding over by Subtenant.

(b) Subtenant shall indemnify and hold harmless Sublandlord from any claims, liabilities, damages, costs and expenses (including reasonable out of pocket attorneys' fees) ("**Claims**") that Sublandlord incurs as a result of a breach by Subtenant of this Sublease, provided however that such indemnification liability shall be reduced to the extent that Sublandlord's negligence or willful misconduct caused such Claims. Sublandlord shall indemnify and hold harmless Subtenant from any Claims that Subtenant incurs as a result of a breach by Sublandlord of this Sublease or the Primary Lease, provided however that such indemnification liability shall be reduced to the extent that Subtenant's negligence or willful misconduct caused such Claims. Notwithstanding the foregoing, in no event will either Sublandlord or Subtenant be liable to the other for any indirect, special, consequential or incidental damages, including loss of profit and loss of goodwill, however caused and on any theory of liability, arising in any way out of this Sublease, except in a case of gross negligence or willful misconduct.

(d) Subtenant shall procure, and keep in force and pay for, insurance coverage in accordance with the coverages and conditions (including waiver of subrogation and right of recovery) required under the Primary Lease, and shall provide certificates of insurance to Sublandlord at or prior to the Effective Date.

(e) The provisions of this Section 19 shall survive the termination of this Sublease.

20. Release; Waiver of Subrogation.

Subtenant hereby releases Sublandlord or anyone claiming through or under Sublandlord by way of subrogation or otherwise to the extent that Sublandlord so releases Prime Landlord pursuant to the terms of the Primary Lease. Subtenant hereby releases Prime Landlord or anyone claiming through or under Prime Landlord by way of subrogation or otherwise to the extent that Sublandlord releases Prime Landlord pursuant to the terms of the Primary Lease. Subtenant shall cause its insurance carriers to include any clauses in, or endorsements on, any insurance policy in favor of Sublandlord, Prime Landlord and any additional parties, which Sublandlord is required to include pursuant to the provisions of the Primary Lease.

21. Parking.

Subtenant shall have the right, but not the obligation, to sublease a total of 71 parking spaces from Sublandlord in the OKS Garage that serves the Subleased Premises. Subtenant shall pay Sublandlord fair market rates, such rate being the rate then charged to Sublandlord without mark-up pursuant to Section 12 of the Fourth Amendment and Section 29.19 of the Original Lease, which may change from time to time in accordance with the terms of the Primary Lease, for such spaces, which as of the Effective Date is $310/space. Nothing in this Sublease shall prohibit Subtenant from negotiating directly with OKS Garage for the use of the required parking spaces. In the event Subtenant enters into a direct parking agreement with OKS Garage for the spaces described in this Section 21, Subtenant shall be permitted to pay the applicable rates for such parking spaces directly to Prime Landlord rather than to Sublandlord.

22. Janitorial Services; Signage; Access; Loading Dock; Other Amenities.

Subtenant shall supply its own cleaning and rubbish removal from the Subleased Premises. Subject to the Primary Lease, (i) Subtenant shall be allowed standard signage (consistent with that of other tenants in the Building) at the entrance to the Subleased Premises, (ii) Subtenant's employees shall have access to the Subleased Premises and any Common Areas consistent with that of other tenants in the Building, which is currently, twenty-four (24) hours per day, seven (7) days per week; (iii) as applicable, Subtenant shall have shared access to the common area loading dock and the Rooftop Mechanical Area (subject to the terms of the Primary Lease regarding the use of such rooftop space, including all consent and notice requirements), and (iv) Subtenant shall be permitted to use the Complex fitness center at times and on terms consistent with that of other tenants in the Building.

23. Electricity; Gas Service; Emergency Generator.

Subtenant shall contract and pay for electricity and natural gas directly to the applicable utility company. Subtenant and Sublandlord shall each be responsible for the upkeep and maintenance of the emergency generators listed in the table below as indicated in the column entitled "Primary Responsibility for Upkeep", but each shall be entitled to pass through some of the expenses of such upkeep and maintenance to the other party to the extent indicated in the parentheticals in such column (if any) for the period of time that such party is using the generators listed in the table below. Sublandlord represents and warrants that the emergency generators listed below are in good working condition in all material respects as of the Effective Date. To the extent the spaces served by such existing generators (or new generators) are changed during the Term, the maintenance responsibilities and/or pass-through allowances shall be equitably adjusted to reflect actual use of the existing (or new) generators by the respective party.

Spaces served	**Generator description**	**Location of generator**	**% of generator capacity**	**Primary Responsibility for Upkeep**
Nano manufacturing suite	Cummings 100kW	Roof, Bldg 500	100% Subtenant	Subtenant
4th floor 600 (QC & QA labs)	Kohler 80 KW	Roof, Bldg 600	100% Subtenant	Subtenant
2nd floor 600/700	Cummings 450KW	Roof, Bldg 600	95% Sublandlord (2nd floor); 5% Subtenant (mfg warehouse)	Sublandlord (pass through 5% of expenses to Subtenant)
4th /5th Floor 700	CPI 115KW	Roof, Bldg 700	75% Subtenant (Bldg 700 labs-4th floor); 25% Sublandlord (Bldg 700 labs-5th floor)	Subtenant (pass through 25% of expenses to Sublandlord)

24. Notices.

All notices and other communications required or permitted under this Sublease shall be given in the same manner as in the Primary Lease. Notices shall be addressed to the addresses set forth below:

To Subtenant at:	Ipsen Bioscience, Inc. 650 East Kendall Street Cambridge, MA 02142 Attn: John Kehoe with a copy to: François Garnier, EVP General Counsel 65 quai Georges Gorse 92100 Boulogne Billancourt France Email: francois.garnier@ipsen.com
With a copy (which shall not constitute notice) to:	Dechert LLP 1900 K Street, NW Washington, DC 20006 Email: tony.chan@dechert.com Attn: Tony Chan
To Sublandlord at:	Merrimack Pharmaceuticals, Inc. One Kendall Square, Suite B7201 Cambridge, MA 02139 Attn: Brian Kickham

25. Brokers.

Sublandlord and Subtenant each represent to the other that it has not dealt with any broker in connection with this Sublease, except that Subtenant has been represented by, and shall be responsible for any fees due to, Jones Lang LaSalle ("**JLL**") arising from Subtenant's representation by JLL. Sublandlord and Subtenant each indemnify and hold harmless the other from and against all Claims incurred by one party resulting from a breach of this representation and warranty by the other party. This Section 25 shall survive the expiration or earlier termination of this Sublease.

26. Entire Agreement.

This Sublease contains the entire agreement between the parties with respect to the subject matter contained herein and all prior negotiations and agreements are merged herein. In the event any provisions of this Sublease are held to be invalid or unenforceable in any respect, the validity, legality or enforceability of the remaining provisions of this Sublease shall remain unaffected.

27. Amendments and Modifications.

This Sublease may not be modified or amended in any manner other than by a written agreement signed by Sublandlord and Subtenant.

28. Successors and Assigns.

The covenants and agreements contained in this Sublease shall bind and inure to the benefit of Sublandlord and Subtenant and their respective permitted successors and assigns.

29. Counterparts.

This Sublease may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original for all purposes, and all such counterparts shall together constitute but one and the same instrument. A signed copy of this Sublease delivered by either facsimile or e-mail shall be deemed to have the same legal effect as delivery of an original signed copy of this Sublease.

30. Defined Terms.

All capitalized terms not otherwise defined in this Sublease shall have the definitions contained in the Primary Lease.

31. Choice of Law.

This Sublease shall be governed by, and construed in accordance with, the laws of the Commonwealth of Massachusetts, without regard to conflict of law rules.

32. Purchase Agreement. Nothing in this Sublease shall abrogate or abridge any rights or responsibilities arising from that certain Asset Purchase and Sale Agreement, dated as of January 7, 2017, between Sublandlord and Ipsen S.A., a société anonyme duly organized and existing under the laws of France. Subtenant is a subsidiary of Ipsen S.A.

33. Confidentiality.

Sublandlord and Subtenant acknowledge that their respective businesses require maintaining the confidentiality of information, correspondence and records pertaining to such businesses. Sublandlord and Subtenant agree to cause their respective employees and persons visiting the Demised Premises and Subleased Premises to respect such confidentiality at all times.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have executed this Sublease as of the date first above written.

SUBLANDLORD:
MERRIMACK PHARMACEUTICALS, INC.
By /s/ Jeffrey A. Munsie

Name: Jeffrey A. Munsie
Title: General Counsel

SUBTENANT:
IPSEN BIOSCIENCE, INC.
By / s/ Alexandre Lebeaut

Name: Alexandre Lebeaut
Title: President

Schedule 1

Basement

Storage Space (1,894 sq. ft.)*

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-6/30/19	$ 1,894.00	$ 1.00

1st Floor

1st Floor Space (Nano-manufacturing) (8,437 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 33,748.00	$ 4.00
5/1/17-4/30/18	$ 34,451.00	$ 4.08
5/1/18-6/30/19	$ 35,154.17	$ 4.17

Additional 1st Floor Space (249 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 996.00	$ 4.00
5/1/17-4/30/18	$ 1,016.75	$ 4.08
5/1/18-6/30/19	$ 1,245.00	$ 5.00

Former OmniGuide Space (5,687 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 20,378.42	$ 3.58
5/1/17-4/30/18	$ 20,852.33	$ 3.67
5/1/18-6/30/19	$ 21,326.25	$ 3.75

Chemical Storage Space (1st floor) (491 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 1,923.08	$ 3.92
5/1/17-4/30/18	$ 1,964.00	$ 4.00
5/1/18-6/30/19	$ 2,004.92	$ 4.08

2nd Floor

600 Expansion Space & Hallway Space (2nd floor) (7,964 sq. ft.)*

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 32,519.67	$ 4.08
5/1/17-4/30/18	$ 33,183.33	$ 4.17
5/1/18-6/30/19	$ 33,847.00	$ 4.25

4th Floor

4th Floor Space (30,626 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 120,589.88	$ 3.94
5/1/17-4/30/18	$ 123,142.04	$ 4.02
5/1/18-6/30/19	$ 125,694.21	$ 4.10

Additional Space (4,773 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 18,694.25	$ 3.92
5/1/17-4/30/18	$ 19,092.00	$ 4.00
5/1/18-6/30/19	$ 19,489.75	$ 4.08

Expansion Space I (8,763 sq. ft.)

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 34,321.75	$ 3.92
5/1/17-4/30/18	$ 35,052.00	$ 4.00
5/1/18-6/30/19	$ 35,782.25	$ 4.08

Expansion Space II (1,353 sq. ft.)*

Period	Monthly Rent	Monthly Base Rent per Rentable Square Foot
Effective Date-4/30/17	$ 4,284.50	$ 3.17
5/1/17-4/30/18	$ 4,397.25	$ 3.25
5/1/18-6/30/19	$ 4,510.00	$ 3.33

*represents partial space from description in Primary Lease

Total

Square feet	70,237
Effective Date - 4/30/17	$ 269,349.55 Base Rent/month
5/1/17-4/30/18	$ 275,044.70 Base Rent/month
5/1/18-6/30/19	$ 280,947.55 Base Rent/month

EXHIBIT A

DESCRIPTION OF SUBLEASED PREMISES

Basement, 1st floor

- Nano-liposome suite and warehouse
- Limited operator office space
- Chemical Storage Space
- Storage

2nd floor

- Warehouse space
- Office space

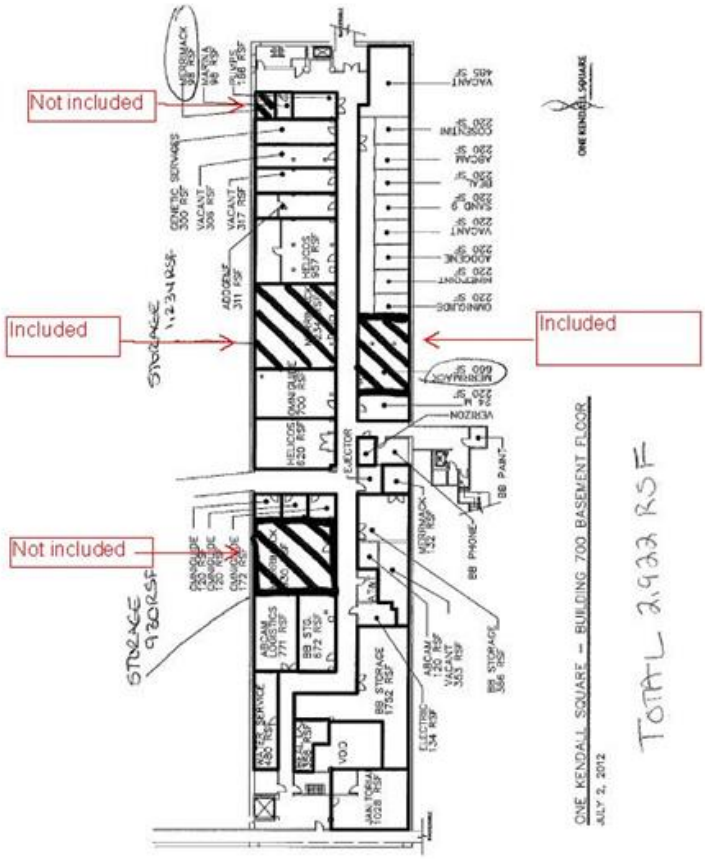
4th floor

- QC Labs
- Nano PD labs
- Office space
- Document storage for QA
- Additional Warehouse Space

[Floorplans attached]

Storage Space

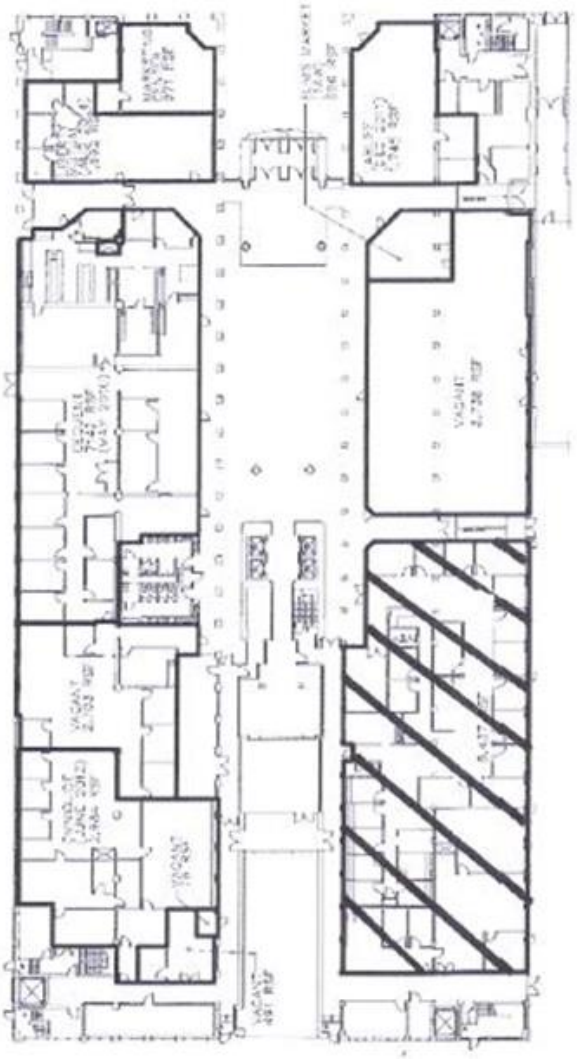
Exhibit 2B
Lease Plan (Storage Space)



0041639 6.DOCX/11

First Floor Space

Exhibit 2
Lease Plan (Existing Lab/Office Premises)



ONE KENDALL SQUARE

2 & 6 KENDALL SQUARE – BUILDING 600, 650, 700 – 1ST FLOOR

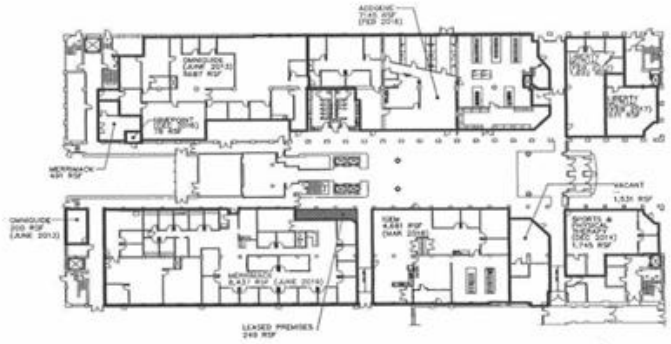
(8,439 RSF)

1ST FLOOR SPACE

NANO FACILITY (ALL INCLUDED)

Additional First Floor Space

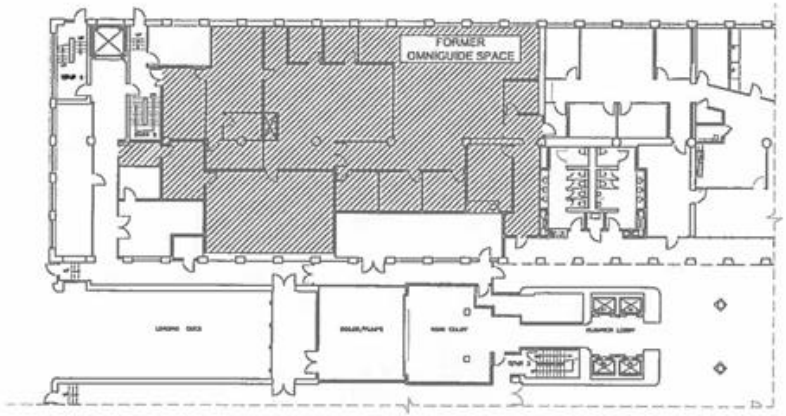
EXHIBIT A-2, FIRST AMENDMENT
LEASE PLAN FOR ADDITIONAL 1ST FLOOR SPACE



ONE KENDALL SQUARE – BUILDING 600, 650, 700 – 1ST FLOOR
JAN. 02, 2013

EXHIBIT B – OUTLINE OF FORMER OMNIGUIDE SPACE

This plan is intended only to show the general outline of the Former OmniGuide Space as of the date of this Amendment. Any depiction of interior windows, walls, cubicles, modules, furniture and equipment on this plan is for illustrative purposes only, but does not mean that such items exist. Landlord is not required to provide, install or construct any such items. It does not in any way supersede any of Landlord's rights set forth in the Lease or this Amendment with respect to arrangements and/or locations of public parts of the Building. It is not necessarily to scale; any measurements or distances shown should be taken as approximate. The inclusion of elevators, stairways, electrical and mechanical closets, and other similar facilities for the benefit of occupants of the Building does not mean such items are part of the Former OmniGuide Space.



Former OmniGuide Space

LEASE EXHIBIT: BUILDING 700 – FLOOR 1

BIOGEN IDEC, ONE KENDALL SQUARE, CAMBRIDGE, MA

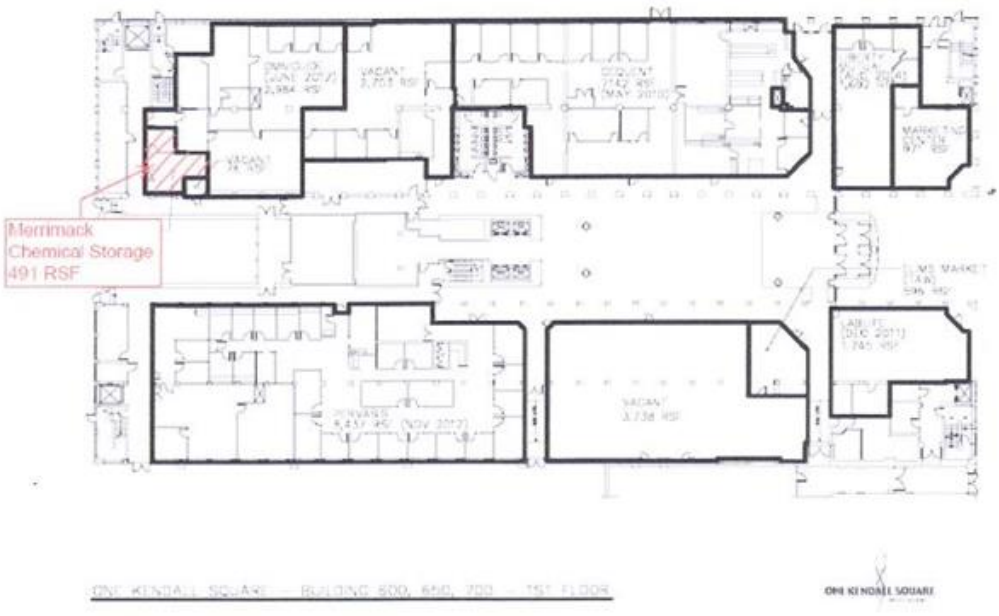
R.E. DINNEEN ARCHITECTS & PLANNERS, INC.

Chemical Storage Space

(2)

Exhibit 2D

Lease Plan (Chemical Storage Space)



ONE KENDALL SQUARE — BUILDING 600, 650, 700 — 1ST FLOOR

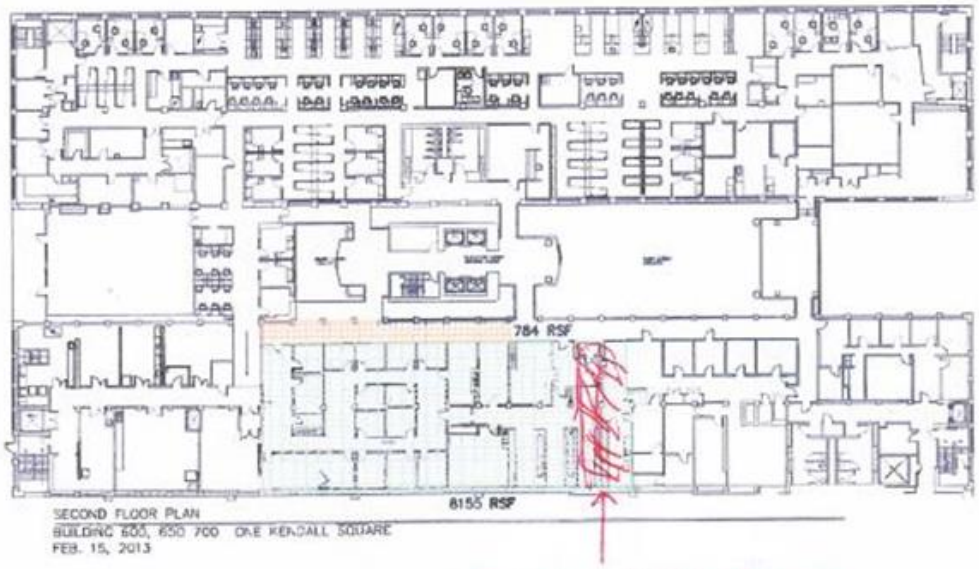
ONE KENDALL SQUARE

600 Expansion Space + Hallway Space

(4)

EXHIBIT A-1, FIRST AMENDMENT

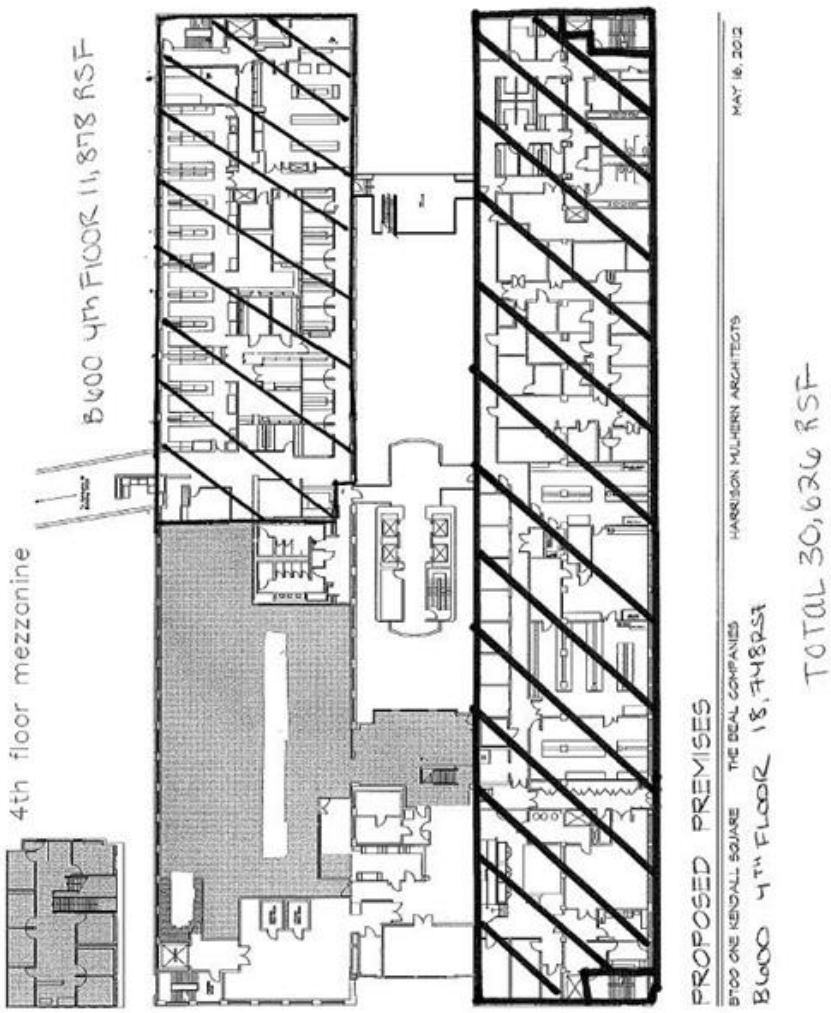
LEASE PLAN FOR 600 EXPANSION SPACE AND HALLWAY SPACE



SECOND FLOOR PLAN
BUILDING 600, 650 700 ONE KENDALL SQUARE
FEB. 15, 2013

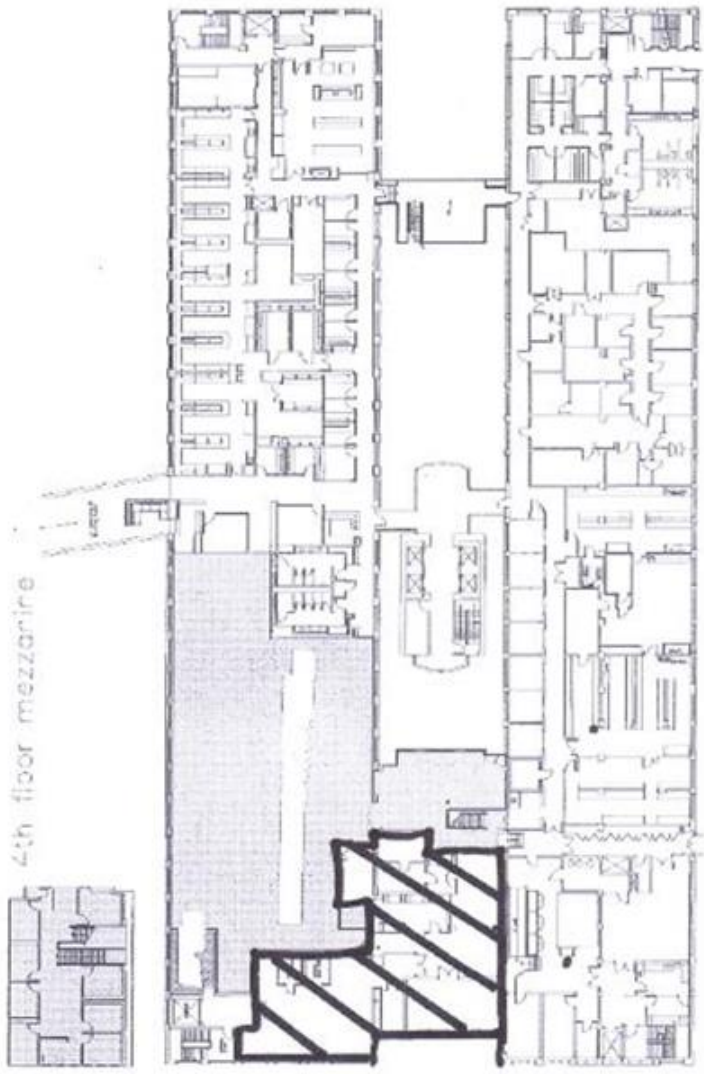
Excluding hatched space
7964 of 8939 sq. ft
Warehouse and office

4th Floor Space



Additional Space (4th Floor)

(6)



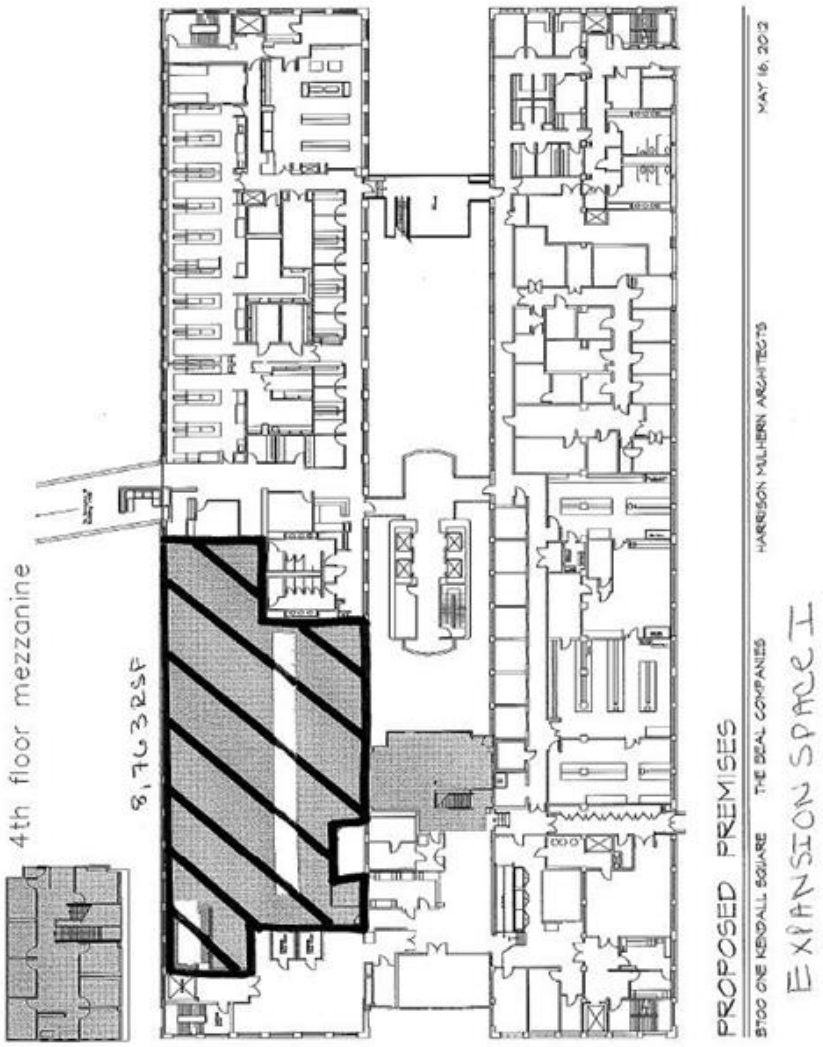
PROPOSED REVISES

BASE 4TH FLOOR 4,793 RSF

ADDITIONAL SPACE

FILL IN MFG. WAREHOUSE

Expansion Space I



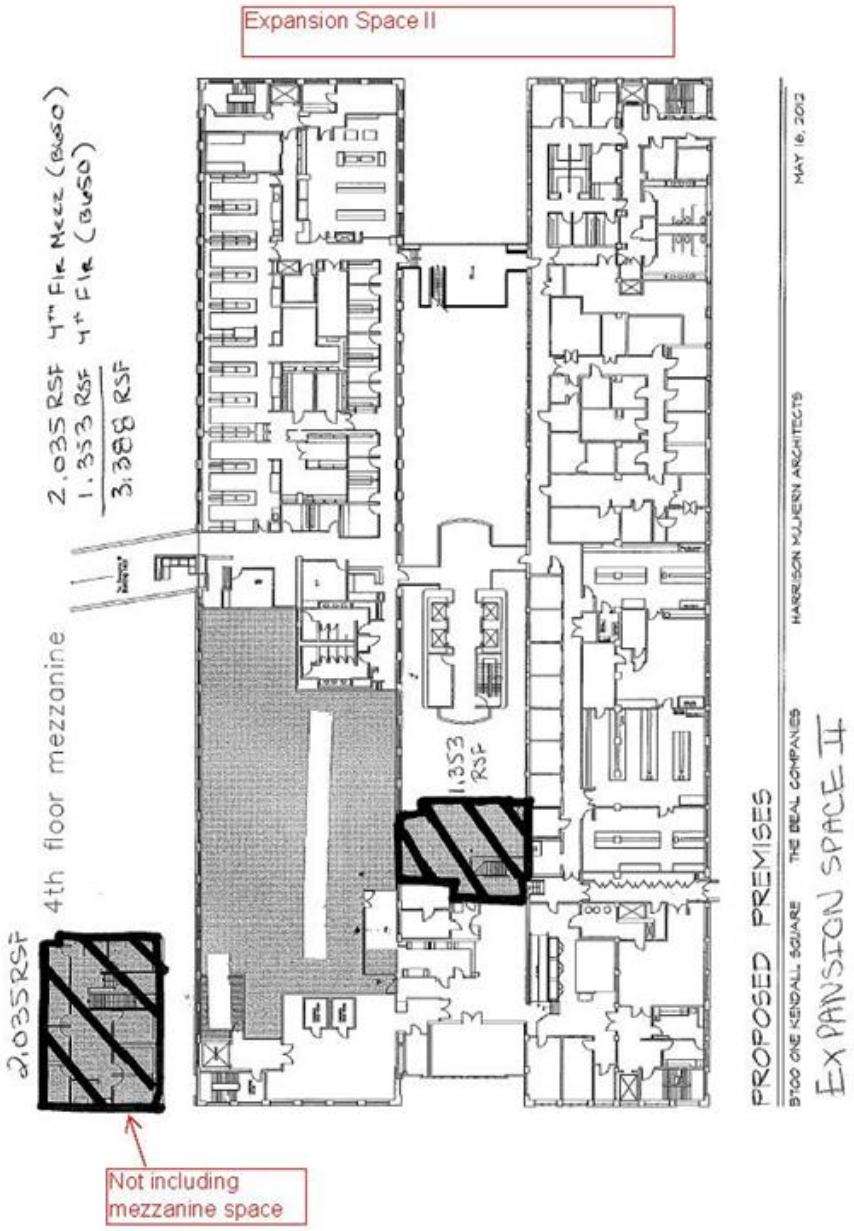

Expansion Space II
2,035 RSF 4TH Flr Mezz (BUSO)
1,353 RSF 4th Flr (BUSO)
3,388 RSF
4th floor mezzanine
2,035RSF
1,353 RSF
Not including mezzanine space
PROPOSED PREMISES
8100 ONE KENDALL SQUARE THE BEAL COMPANIES HARRISON MUJIERN ARCHITECTS
MAY 16, 2012
EXPANSION SPACE II

EXHIBIT B

PRIMARY LEASE + AMENDMENTS

[To be attached]

EXHIBIT C

APPROXIMATE LOCATION OF FORMER LABS

[Floorplan attached]

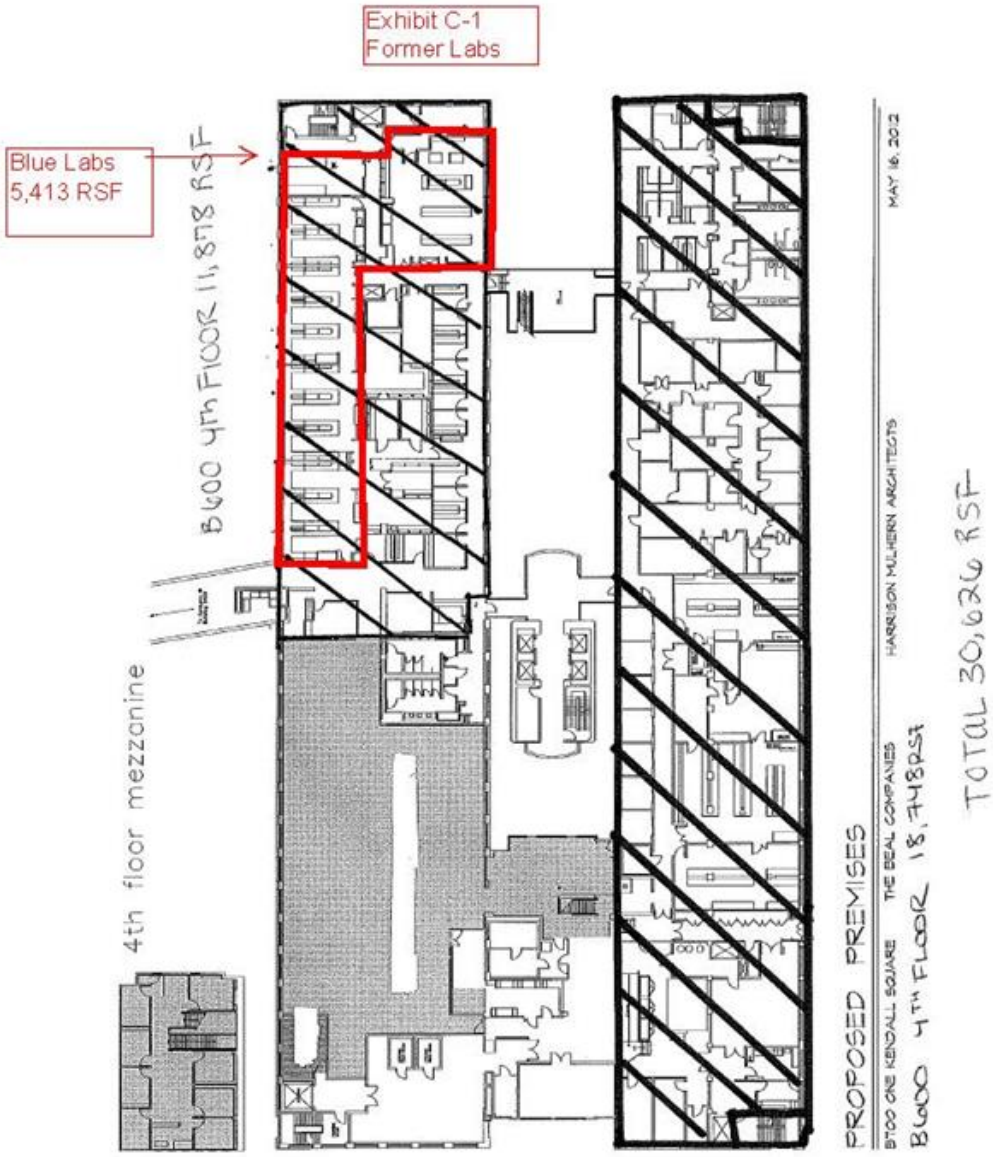


Exhibit C-1
Former Labs
Blue Labs
5,413 RSF
B400 4th FLOOR 11,878 RSF
4th floor mezzanine
PROPOSED PREMISES
B100 ONE KENDALL SQUARE THE BEAL COMPANIES HARRISON MULHERN ARCHITECTS MAY 16, 2012
B400 4TH FLOOR 18,748RSF
TOTAL 30,626 RSF

Exhibit C-2
Former Labs

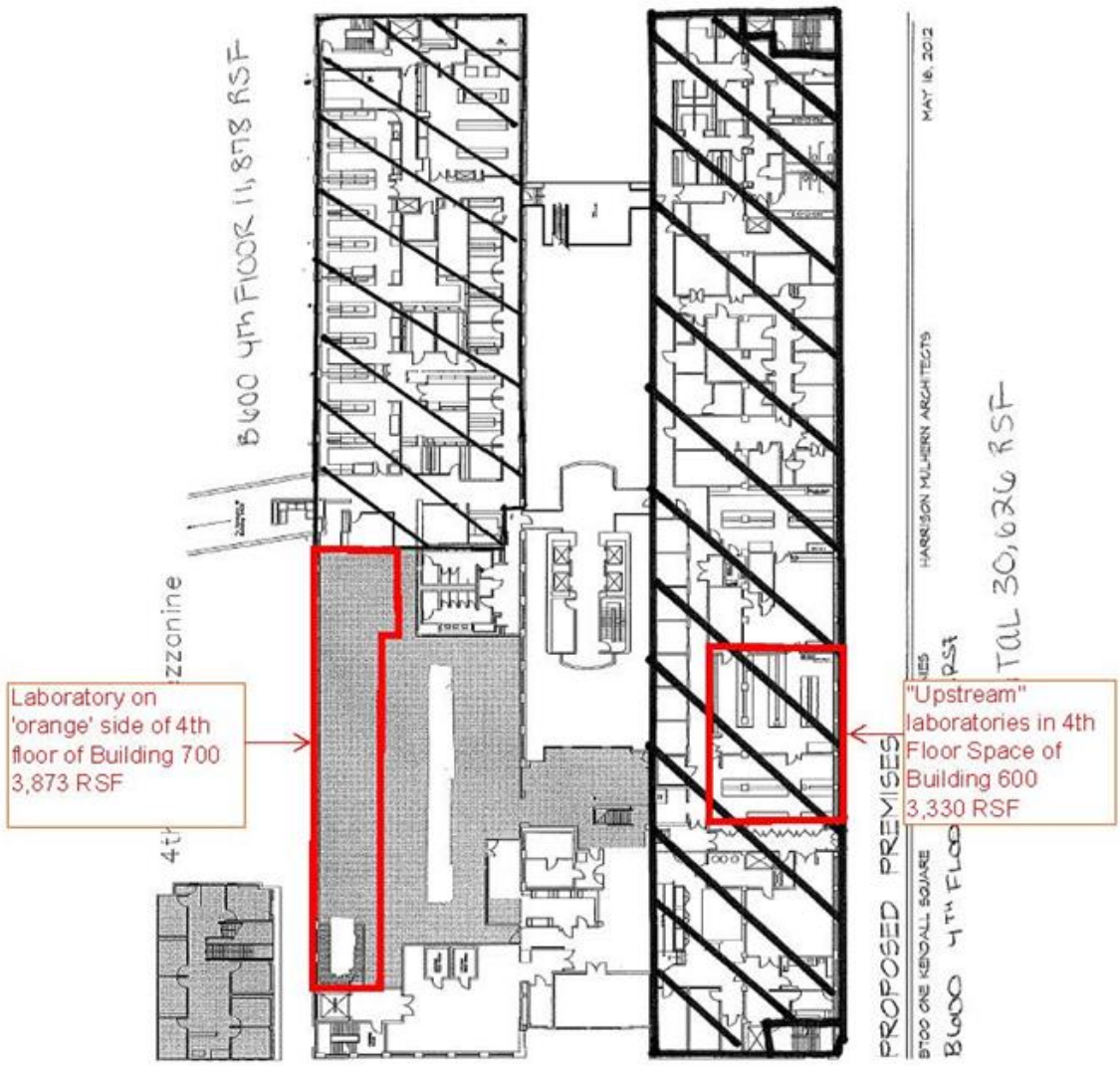


Exhibit 31.1

CERTIFICATIONS

I, Richard Peters, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Merrimack Pharmaceuticals, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: May 10, 2017

/s/ Richard Peters, M.D., Ph.D.
Richard Peters, M.D., Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Yasir B. Al-Wakeel, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Merrimack Pharmaceuticals, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: May 10, 2017

/s/ Yasir B. Al-Wakeel, BM BCh

Yasir B. Al-Wakeel, BM BCh
Chief Financial Officer and Head of Corporate Development
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,

AS ADOPTED PURSUANT TO

SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Merrimack Pharmaceuticals, Inc. (the "Company") for the period ended March 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Richard Peters, President and Chief Executive Officer 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: May 10, 2017

/s/ Richard Peters, M.D., Ph.D.
Richard Peters, M.D., Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,

AS ADOPTED PURSUANT TO

SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Merrimack Pharmaceuticals, Inc. (the "Company") for the period ended March 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Yasir B. Al-Wakeel, Chief Financial Officer 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: May 10, 2017

/s/ Yasir B. Al-Wakeel, BM BCh
Yasir B. Al-Wakeel, BM BCh
Chief Financial Officer and Head of Corporate Development
(Principal Financial Officer)