Subject to completion, dated June 16, 2017

Prospectus

5,000,000 shares

Mersana THERAPEUTICS

Common stock

This is an initial public offering of shares of common stock of Mersana Therapeutics, Inc. All of the 5,000,000 shares of common stock are being sold by the Company.

Prior to this offering, there has been no public market for the common stock. The estimated initial public offering price per share is between $14.00 and $16.00. We have applied to list our common stock on The NASDAQ Global Market under the symbol "MRSN."

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012 and, as such, may elect to comply with certain reduced public company reporting requirements for future filings.

See "Risk factors" on page 11 to read about factors you should consider before buying shares of our common stock.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

	Per share	Total
Initial public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds to Mersana Therapeutics, Inc., before expenses	$	$

(1) We refer you to "Underwriting" beginning on page 167 of this prospectus for additional information regarding underwriting compensation.

To the extent that the underwriters sell more than 5,000,000 shares of common stock, the underwriters have the option to purchase up to an additional 750,000 shares from Mersana Therapeutics, Inc. at the initial public offering price less the underwriting discount.

Certain of our existing stockholders, New Enterprise Associates, Pfizer Inc. and Takeda Pharmaceutical Company Limited, have indicated an interest in purchasing, in aggregate, up to approximately $30 million in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters could determine to sell more, fewer or no shares to any of these potential investors, and any of these potential investors could determine to purchase more, fewer or no shares in this offering.

The underwriters expect to deliver the shares to investors on , 2017.

J.P. Morgan **Cowen** **Leerink Partners**

Wedbush PacGrow

Prospectus dated , 2017.

Table of contents

In this prospectus, ''Mersana Therapeutics,'' ''Mersana,'' the ''Company,'' ''we,'' ''us'' and ''our'' refer to Mersana Therapeutics, Inc. and its consolidated subsidiary. We and the underwriters have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is current only as of its date.

For investors outside of the United States: We have not, and the underwriters have not, done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside of the United States.

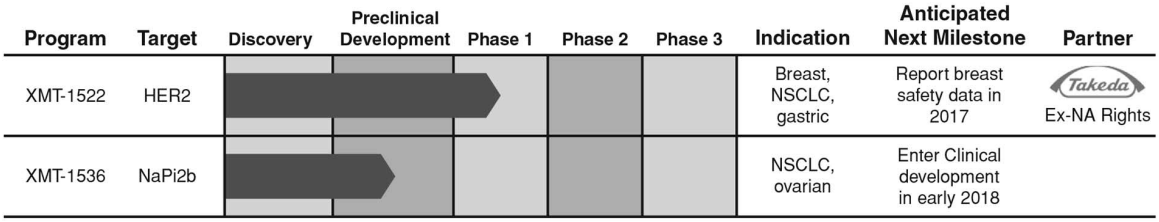
We own or have rights to trademarks, service marks and trade names that we use in connection with the operation of our business, including our corporate name, logos and website names. Other trademarks, service marks and trade names appearing in this prospectus are the property of their respective owners. The trademarks that we own include Mersana®. Solely for convenience, some of the trademarks, service marks and trade names referred to in this prospectus are listed without the ® and ™ symbols, but we will assert, to the fullest extent under applicable law, our rights to our trademarks, service marks and trade names.

Prospectus summary

This summary highlights information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our financial statements and the related notes included elsewhere in this prospectus. You should also consider, among other things, the matters described under "Risk factors" and "Management's discussion and analysis of financial condition and results of operations," in each case appearing elsewhere in this prospectus.

Overview

We are a clinical stage biopharmaceutical company focused on developing antibody drug conjugates, or ADCs, that offer a clinically meaningful benefit for cancer patients with significant unmet need. We have leveraged 20 years of industry learning in the ADC field to develop proprietary technologies that enable us to design ADCs to have improved efficacy, safety and tolerability relative to existing ADC therapies. Our most advanced platform, Dolaflexin, has been used to generate a pipeline of proprietary ADC product candidates to address patient populations that are not currently amenable to treatment with traditional ADC-based therapies. Our lead product candidate, XMT-1522, is a HER2-targeted ADC currently in a Phase 1 dose escalation study in primarily breast cancer patients, with interim safety results expected by the end of 2017. Upon the completion of dose escalation, we plan to expand clinical development of XMT-1522 into additional breast cancer, non-small cell lung cancer, or NSCLC, and gastric cancer patient populations, all of which are not addressed by existing HER2 therapies. Our second product candidate, XMT-1536, is an ADC targeting NaPi2b, an antigen broadly expressed in ovarian cancer and NSCLC. We expect XMT-1536 to enter clinical development in early 2018. Our current product candidates, all based on our Dolaflexin platform, are summarized in the chart below:



Beyond our two lead product candidates, we continue to invest in our earlier stage product candidates and in our ADC technologies. In addition, we have established a strategic partnership with Takeda Pharmaceutical Company Limited, or Takeda, under which they obtained rights to XMT-1522 outside of the United States and Canada. We have also established strategic research and development partnerships with Takeda and Merck KGaA for the development and commercialization of additional ADC product candidates against a limited number of targets selected by our partners based on our Dolaflexin platform. Takeda has selected four out of a possible seven target antigens and Merck KGaA has selected all six possible target antigens under their strategic research and development partnerships. The most advanced ADC product candidates being developed in these partnerships are in the lead optimization stage and all of the ADC product candidates are the subject of ongoing discovery efforts by our partners. We believe the potential of our ADC technologies, supported by our world-class management team and protected by our robust intellectual property portfolio, will allow us to develop targeted and highly tailored therapies to help a broader range of cancer patients become cancer survivors.

ADCs are an established therapeutic approach in oncology used to selectively deliver a highly potent chemotherapeutic payload directly to tumors thereby minimizing toxicity to surrounding healthy tissue. Upon binding to the tumor cell antigen, the ADC is internalized by the tumor cell and the payload is released, killing the cell in a targeted manner. Currently, there are two approved and broadly available ADCs which achieved combined worldwide net sales in excess of $1 billion in 2016. There are also approximately 60 ADCs presently in development in over 300 clinical studies, the vast majority of which are focused on the treatment of cancer. We believe the commercial success of previously approved ADCs, combined with the number of ADCs currently in clinical development, demonstrates the potential of ADCs to become a mainstay of cancer treatment.

Despite the promise of ADCs, the challenge of optimizing the balance between efficacy and tolerability, or therapeutic index, has limited their suitability as treatments for cancer more broadly. Our proprietary and highly differentiated Dolaflexin platform is designed to overcome such challenges. Unlike traditional ADCs, where the payload is attached directly to the antibody via a linker, our ADCs feature antibodies attached to multiple units of Dolaflexin, which each consist of our Fleximer polymer scaffold conjugated to several proprietary auristatin payload molecules designed to have a controlled bystander effect. As a result, we believe our ADCs offer the following benefits relative to traditional ADCs:

- **Improved linker stability:** Fleximer is a biodegradable, highly biocompatible and highly water soluble polymer scaffold which stabilizes the ADC linker and payload in circulation.
- **Higher drug-to-antibody ratio:** Our ADCs have a drug-to-antibody ratio, or DAR, of 12 to 15 while maintaining acceptable pharmacokinetics and drug-like properties in animal models. This represents a three- to four-fold improvement over traditional ADCs using direct conjugation, which has translated in animal models into a significant increase in efficacy relative to traditional ADCs administered at comparable or even higher dose levels.
- **Expanded range of addressable target antigen expression levels:** As a result of higher DAR, our ADCs can deliver more payload to the tumor cell per antibody binding and internalization event. Our lead product candidates, XMT-1522 and XMT-1536, have demonstrated efficacy in animal models of low antigen-expressing tumors where alternative ADC platforms have shown either weak or no efficacy.
- **Controlled bystander effect:** Our proprietary auristatin payload promotes potent cell killing upon initial release from the ADC, and has the ability to kill surrounding tumor cells through the bystander effect. However, this payload is further processed in the cell to a metabolite which remains strongly cytotoxic, but loses the ability to cross the cell membrane and as a result, becomes trapped and loses bystander capability. This feature, that we refer to as DolaLock, allows us to capture the benefits of the bystander effect while minimizing potential toxicities to healthy tissue.

We have assembled a management team with extensive, relevant experience, including specific ADC experience, at leading pharmaceutical companies such as Millennium Pharmaceuticals, Inc., Takeda, Sanofi S.A., Merck & Co., Inc., Biogen, Inc., MedImmune, Inc. and Bayer AG. We are supported by our board of directors and scientific advisory board, who offer complementary experience in drug discovery and development, as well as expertise in building public companies, management and business development. Our key investors include funds managed by New Enterprise Associates, Arrowpoint Partners, Cormorant Asset Management, F-Prime Capital Partners, Rock Springs Capital and Wellington Management, as well as Pfizer and our strategic partner, Takeda. We believe that our highly differentiated platform, together with the team we have assembled, positions us well to generate best-in-class ADCs with the potential to transform the lives of cancer patients.

Our product candidates

XMT-1522: our HER2-targeted ADC

Our lead product candidate, XMT-1522, is a Dolaflexin ADC targeting HER2-expressing tumors. HER2 belongs to a family of signaling molecules that are highly and preferentially expressed on the surface of various cancer cells, and are known to play a role in promoting tumor cell growth. Currently approved HER2-targeted therapies are indicated only for patients who express HER2 at high levels, and who are referred to as HER2-positive, however there is a significantly larger population of patients with low-to-moderate HER2 expression who have more limited treatment options. We are focused on leveraging the properties of XMT-1522 for HER2-expressing patient populations where existing approved HER2 therapies are either not indicated or have failed. XMT-1522 is currently in a Phase 1 dose escalation study, for which we are actively recruiting and dosing primarily breast cancer patients with a HER2 score of 1+ or greater as well as NSCLC and gastric cancer patients. We expect to report interim safety results from this study by the end of 2017. Upon the completion of dose escalation, we plan to expand clinical development of XMT-1522 into additional breast cancer, NSCLC, and gastric cancer patient populations.

Our development plan for XMT-1522 is supported by extensive preclinical data in animal models that represent diverse levels of HER2 expression across multiple tumor types. Our data demonstrate that XMT-1522, administered as a single dose or in three weekly doses, leads to complete tumor regressions in 11 out of 15 models tested. Tumor regressions were shown to be durable in 10 out of 11 animals 45 days post-dosing. Furthermore, XMT-1522 also demonstrated improved efficacy relative to traditional ADCs, even in tumor models where the target antigen is expressed at moderate to low levels, and showed the potential to be used in combination with other HER2-targeted agents as well as checkpoint inhibitors. We have established in animal models that XMT-1522 is stable in circulation, has predictable pharmacokinetics and an acceptable safety profile.

XMT-1536: our NaPi2b-targeted ADC

Our second product candidate, XMT-1536, is a Dolaflexin ADC targeting NaPi2b-expressing tumors. NaPi2b is an antigen highly expressed in 60 to 90% of both non-squamous NSCLC and epithelial ovarian cancer. Data from earlier clinical studies conducted by Genentech, Inc., or Genentech, with lifastuzumab vedotin, another NaPi2b targeting ADC, provide partial validation of NaPi2b as a target in these indications and form the basis of our rationale to advance XMT-1536 as a potentially clinically meaningful ADC for the treatment of these diseases. XMT-1536 is currently in Investigational New Drug Application, or IND, enabling studies, and we expect it to enter clinical development in early 2018.

In our preclinical studies, XMT-1536 induced complete tumor regressions in an ovarian cancer model and an adenocarcinoma model after three weekly doses of 3 mg/kg. In comparison, lifastuzumab vedotin failed to induce tumor regressions when similarly administered in three weekly doses of 3 mg/kg, and was associated with dose-limiting neutropenia in monkeys at doses above this level. XMT-1536 was also tested in eight patient-derived tumor models of NSCLC adenocarcinoma, where it led to complete or near-complete tumor regressions in five of eight models, and significant tumor growth delay in two of the remaining three models. These tumor regressions were durable 45 days post-dosing. Similarly, XMT-1536 was tested in fifteen ovarian patient derived models where it led to complete or near complete tumor regressions in nine models and partial regressions in three models. Retrospective evaluation of NaPi2b expression appears to correlate with responses to XMT-1536. In an exploratory repeat dose non-human primate study of XMT-1536, no neutropenia was observed at payload doses that were at least four times the maximum tolerated dose of lifastuzumab vedotin and at least two times the dose that caused fatal neutropenia with lifastuzumab vedotin.

Platform development

We intend to establish a leading position in the field of ADCs by continuing to advance platform innovations that further broaden the potential of our ADCs to deliver clinically meaningful benefit for cancer patients. Our areas of focus include the development of alternative scaffolds to drive homogeneity of our ADCs, alternative payloads to address additional indications and drug resistance and alternative targeting moieties to improve tumor penetration and biodistributuion. We believe these efforts may lead to improved efficacy and tolerability of our ADCs, as well as expansion of the addressable patient population.

Our strategic partnerships with Takeda

In January 2016, we entered into a collaboration agreement with Takeda for the development and commercialization of XMT-1522. Under this agreement, Takeda obtained exclusive rights to XMT-1522 outside of the United States and Canada. To date, we have received upfront and milestone payments totaling $46.5 million, and may receive future development, regulatory and commercial milestones as well as tiered royalties on net sales of XMT-1522 in Takeda's territory.

In March 2014, we entered into a collaboration agreement with Takeda for the development and commercialization of ADC product candidates utilizing Fleximer. In January 2016, we amended this agreement to expand the partnership and received an additional $13.5 million. Under this agreement, Takeda may select up to seven target antigens for which they are responsible for generating antibodies for us to conjugate with Fleximer and our proprietary payloads to create the ADC product candidates. Takeda has the exclusive rights to, and is responsible for, the further development, manufacture and commercialization of these ADC product candidates. Under certain circumstances, we have the option to co-develop and co-commercialize one of these products in the United States. The most advanced product candidates in this partnership are in the lead optimization stage. See ''Business—Strategic partnerships.''

Our strategy

Our goal is to become a leading oncology company by leveraging the potential of our innovative and differentiated ADC technologies. Our strategy to achieve this goal is based on:

- rapidly advancing the clinical development of XMT-1522;
- moving XMT-1536 into clinical development and building a pipeline of ADCs that address the significant unmet medical needs of cancer patients;
- expanding our ADC technology platform capabilities;
- evaluating strategic partnerships to maximize the value of our programs and platforms; and
- attracting and retaining people that share our commitment to scientific excellence and patient care.

Risks associated with our business

Our ability to implement our business strategy is subject to numerous risks that you should be aware of before making an investment decision. These risks are described more fully in the section entitled ''Risk factors,'' immediately following this prospectus summary. These risks include the following, among others:

- We have incurred net losses since our inception, we have no products approved for commercial sale and anticipate that we will continue to incur substantial operating losses for the foreseeable future. We may never achieve or sustain profitability.

- We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our product development or commercialization efforts.
- Failure of a discovery program or product candidate may occur at any stage of preclinical or clinical development, and, because our and our partners' discovery programs and our discovery programs and product candidates are in an early stage of preclinical or clinical development, there is a relatively higher risk of failure and we or our partners may never succeed in developing marketable products or generating product revenue.
- We rely on existing strategic partnerships for the development of certain of our drug candidates, including our lead ADC product candidate, XMT-1522. If our strategic partners do not devote sufficient resources to the development of these ADC product candidates, are unsuccessful in their efforts or chose to terminate their agreements with us, our business will be materially harmed.
- We rely on third parties to manufacture our drug candidates and to conduct clinical trials for our ADC product candidates. If these third parties do not successfully carry out their contractual duties, comply with regulatory requirements or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our ADC product candidates and our business could be substantially harmed.
- Our future commercial success depends upon attaining significant market acceptance of our ADC product candidates, if approved, among physicians, patients and health care payors.
- We face substantial competition, which may result in others discovering, developing or commercializing products before, or more successfully, than we do.
- If we are unable to obtain or protect intellectual property rights related to our technology and ADC product candidates, or if our intellectual property rights are inadequate, we may not be able to compete effectively.
- If we fail to attract and keep senior management and key scientific personnel, we may be unable to successfully develop our ADC product candidates, conduct our clinical studies and commercialize our ADC product candidates.

Implications of being an emerging growth company

As a company with less than $1.07 billion in revenue during our most recently completed fiscal year, we qualify as an ''emerging growth company'' as defined in Section 2(a) of the Securities Act of 1933, as amended, or the Securities Act, as modified by the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable, in general, to public companies that are not emerging growth companies. These provisions include:

- reduced disclosure about our executive compensation arrangements;
- no non-binding stockholder advisory votes on executive compensation;
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting; and

- reduced disclosure of financial information in this prospectus, including only two years of audited financial information and two years of selected financial information.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company if we have more than $1.07 billion in annual revenues as of the end of any fiscal year, if we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission, or SEC, or if we issue more than $1.07 billion of non-convertible debt over a three-year period.

The JOBS Act permits an emerging growth company to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We are choosing to "opt out" of this provision, and this decision is irrevocable.

Corporate history and information

We were incorporated in Delaware in February 2002 under the name Nanopharma Corp. In November 2005, we changed our name to Mersana Therapeutics, Inc. In 2012, we recapitalized the Company and focused our efforts exclusively on ADCs. Our principal executive offices are located at 840 Memorial Drive, Cambridge, Massachusetts 02139, and our telephone number is (617) 498-0020. Our website address is http://www.mersana.com. The information contained in, or that can be accessed through, our website is not part of this prospectus.

The offering

Common stock offered by us	5,000,000 shares
Common stock to be outstanding after this offering	22,645,621 shares (23,395,621 shares if the underwriters exercise their option to purchase additional shares in full)
Option to purchase additional shares	The underwriters have an option for a period of 30 days to purchase up to 750,000 additional shares of our common stock.
Use of proceeds	We estimate that we will receive net proceeds from this offering of approximately $67.5 million, or approximately $78.0 million if the underwriters exercise their option to purchase additional shares in full, based on an assumed initial public offering price of $15.00 per share (the midpoint of the range set forth on the cover of this prospectus), after deducting the underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering as follows: (1) approximately $37.5 million to fund our Phase 1 clinical trials and ongoing development for XMT-1522; (2) approximately $19.0 million to fund our preclinical activities and Phase 1 clinical trials for XMT-1536; (3) approximately $6.0 million to fund new and ongoing research activities including those for our ADC platform with the goal of filing one IND every 12 to 24 months; and (4) the balance for working capital and other general corporate purposes. See "Use of proceeds" for additional information.
Risk factors	You should read carefully the "Risk factors" beginning on page 11 and other information included in this prospectus for a discussion of factors that you should consider before deciding to invest in shares of our common stock.
Proposed NASDAQ Global Market symbol	"MRSN."

The number of shares of common stock to be outstanding after this offering is based on 17,645,621 shares of common stock outstanding as of May 31, 2017 and excludes the following:

- 3,141,625 shares of common stock issuable upon the exercise of outstanding stock options as of May 31, 2017 having a weighted-average exercise price of $2.89 per share;
- 129,491 shares of common stock issuable upon the exercise of outstanding warrants as of May 31, 2017 having an exercise price of $0.05 per share;
- 2,255,000 shares of common stock reserved for future issuance under our 2017 Stock Incentive Plan, or 2017 Stock Plan; and
- 225,000 shares of common stock reserved for future issuance under our 2017 Employee Stock Purchase Plan, or 2017 ESPP, which will become effective upon the completion of this offering.

Except as otherwise indicated, all information contained in this prospectus assumes or gives effect to:

- the automatic conversion of all of our outstanding shares of convertible preferred stock into an aggregate of 16,154,671 shares of common stock upon the completion of this offering;
- no exercise of the outstanding options or warrants described above after May 31, 2017;
- no exercise by the underwriters of their option purchase up to an additional 750,000 shares of our common stock in this offering;
- the adoption of our amended and restated certificate of incorporation and amended and restated by-laws, both of which we will file immediately prior to the completion of this offering; and
- a one-for-4.5 reverse stock split of our common stock effected on June 15, 2017.

Summary financial data

You should read the following summary financial data together with our financial statements and the related notes appearing elsewhere in this prospectus and the information under the headings "Selected financial data" and "Management's discussion and analysis of financial condition and results of operations." We have derived the statement of operations data for the years ended December 31, 2015 and 2016 from our audited financial statements included elsewhere in this prospectus. We have derived the statement of operations data for the three months ended March 31, 2016 and 2017 and the balance sheet data as of March 31, 2017 from our unaudited financial statements appearing elsewhere in this prospectus. These have been prepared on the same basis as the audited financial statements. In the opinion of management, the unaudited data reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of the financial information in those statements. Our historical results are not necessarily indicative of results that should be expected in the future and the results for the three months ended March 31, 2017 are not necessarily indicative of the results for the full year or any other period. The summary financial data in this section are not intended to replace our audited and unaudited financial statements and related notes included elsewhere in this prospectus.

	Year ended December 31,		Three months ended March 31,	
	2015	2016	2016	2017
	(in thousands, except per share data)			
Statements of Operations Data:				
Collaboration revenue	$ 10,359	$ 25,171	$ 3,697	$ 4,290
Operating expenses:				
Research and development	21,353	32,008	7,436	10,106
General and administrative	5,347	6,984	1,621	2,296
Total operating expenses	26,700	38,992	9,057	12,402
Other income (expense):				
Other income (expense), net	(87)	121	4	51
Total other income (expense)	(87)	121	4	51
Net loss	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Net loss attributable to common stockholders	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Net loss per share applicable to common stockholders—basic and diluted(1)	$ (13.43)	$ (10.82)	$ (4.31)	$ (6.02)
Weighted-average number of common shares used in net loss per share attributable to common stockholders—basic and diluted(1)	1,223,457	1,266,758	1,242,993	1,338,475
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited)(2)		$ (1.01)		$ (0.46)
Pro forma weighted average number of common shares used in net loss per share attributable to common stockholders—basic and diluted (unaudited)(2)		13,585,523		17,493,146

	As of March 31, 2017		
	Actual	Pro forma(2)	Pro forma as adjusted(3)
			(in thousands)
Balance Sheet Data:			
Cash and cash equivalents	$ 88,515	$ 88,515	$ 156,520
Working capital(4)	57,662	57,662	126,752
Total assets	95,007	95,007	161,422
Convertible preferred stock	94,450	—	—
Total stockholders' (deficit) equity	(63,312)	31,138	98,638

(1) See Note 2 to the notes to our financial statements appearing elsewhere in this prospectus for further details on the calculation of basic and diluted net loss per share and pro forma basic and diluted net loss per share attributable to common stockholders.

(2) Pro forma statements of operations data and balance sheet data give effect to the automatic conversion of all outstanding shares of our convertible preferred stock as of March 31, 2017 into an aggregate of 16,154,671 shares of our common stock upon the completion of this offering.

(3) Pro forma as adjusted to reflect the pro forma adjustments described in (2) above, and to further reflect the sale of 5,000,000 shares of our common stock offered in this offering, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, at an assumed initial public offering price of $15.00 per share, the midpoint of the range set forth on the cover page of this prospectus. Each $1.00 increase (decrease) in the assumed initial public offering price of $15.00 per share, the midpoint of the range set forth on the cover page of this prospectus, would increase (decrease) each of Pro forma as adjusted Cash and cash equivalents, Working capital, Total assets and Total stockholders' (deficit) equity by approximately $4.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 in the number of shares we are offering would increase (decrease) each of Pro forma as adjusted Cash and cash equivalents, Working capital, Total assets and Total stockholders' (deficit) equity by approximately $14.0 million, assuming the assumed initial public offering price per share, as set forth on the cover page of this prospectus, remains the same

(4) We define working capital as current assets less current liabilities.

Risk factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below together with all of the other information contained in this prospectus, including our financial statements and related notes appearing at the end of this prospectus, before deciding to invest in our common stock. If any of the events or developments described below were to occur, our business, prospects, operating results and financial condition could suffer materially, the trading price of our common stock could decline and you could lose all or part of your investment. 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 currently believe to be immaterial may also adversely affect our business.

Risks related to our financial position and need for additional capital

We have incurred net losses since our inception, we have no products approved for commercial sale and anticipate that we will continue to incur substantial operating losses for the foreseeable future. We may never achieve or sustain profitability.

We have incurred net losses since our inception. Our net loss was $13.7 million for the year ended December 31, 2016 and $8.1 million for the quarter ended March 31, 2017. As of March 31, 2017, we had an accumulated deficit of $67.2 million. We do not know when or whether we will become profitable. To date, we have not commercialized any products and therefore have never generated any revenues from the sale of products, and we do not expect to generate any product revenues in the foreseeable future. Our losses have resulted principally from costs incurred in our discovery and development activities. Our net losses may fluctuate significantly from quarter to quarter and year to year.

We have devoted most of our financial resources to research and development, including our clinical and preclinical development activities. To date, we have financed our operations primarily through the sale of equity securities and the receipt of funds through strategic partnerships with third parties. The amount of our future net losses will depend, in part, on the rate of our future expenditures. We have not completed pivotal clinical studies for any product candidate and only have one product candidate in clinical studies. It will be several years, if ever, before we have a product candidate ready for commercialization. Even if we obtain regulatory approval to market a product candidate, our future revenues would depend upon the size of the market or markets in which our product candidates received such approval and our ability to achieve sufficient market acceptance, reimbursement from third-party payors and adequate market share for our product candidates in those markets.

We expect to continue to incur significant expenses and increasing net losses for at least the next several years. We expect our expenses will increase substantially in connection with our ongoing activities, as we:

- conduct clinical development of XMT-1522, including our Phase 1 clinical study;
- conduct preclinical studies of XMT-1536 to support an IND filing, Phase 1 clinical studies and potential future clinical development of XMT-1536;
- seek regulatory approval for XMT-1522 and XMT-1536;
- add personnel to support our product development efforts;
- continue our research and development efforts for new product opportunities; and
- operate as a public company.

If we are required by the FDA or any equivalent foreign regulatory authority to perform clinical studies or studies in addition to those we currently expect to conduct, or if there are any delays in completing the clinical studies of XMT-1522 or, if preclinical studies are successful, filing an IND and completing clinical studies for XMT-1536, our expenses could increase.

To become and remain profitable, we must succeed in developing our ADC product candidates, obtaining regulatory approval for them, and manufacturing, marketing and selling those products for which we may obtain regulatory approval. We may not succeed in these activities, and we may never generate revenue from product sales or strategic partnerships in an amount sufficient to achieve profitability. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our failure to become or remain profitable would depress our market value and could impair our ability to raise capital, expand our business, discover or develop other ADC product candidates or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed could force us to delay, limit, reduce or terminate our product development or commercialization efforts.

Our cash and cash equivalents were $88.5 million as of March 31, 2017. We have utilized substantial amounts of cash since our inception and expect that we will continue to expend substantial resources for the foreseeable future developing XMT-1522, XMT-1536 and any future ADC product candidates. These expenditures may include costs associated with research and development, conducting preclinical studies and clinical studies, potentially obtaining regulatory approvals and manufacturing products, as well as marketing and selling products approved for sale, if any, and potentially acquiring new technologies. In addition, other unanticipated costs may arise. Because the outcome of our planned and anticipated clinical studies is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our ADC product candidates. Our costs will increase if we experience any delays in our clinical studies for XMT-1522 and anticipated clinical studies for XMT-1536, including delays in enrollment of patients. Upon the closing of this offering, we expect to incur additional costs associated with operating as a public company, hiring additional personnel and expanding our facilities.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing XMT-1522 and XMT-1536 and any other potential ADC product candidates and conducting preclinical studies and clinical studies;
- the timing of, and the costs involved in, obtaining regulatory approvals for XMT-1522 and XMT-1536 and any other potential ADC product candidates if preclinical studies and clinical studies are successful;
- the cost of manufacturing XMT-1522 and XMT-1536 and any other potential ADC product candidates for clinical studies in preparation for regulatory approval and in preparation for commercialization;
- the cost of commercialization activities for XMT-1522 and XMT-1536 and any other potential ADC product candidates, if any ADC product candidates are approved for sale, including marketing, sales and distribution costs;
- our ability to establish and maintain strategic partnerships, licensing or other arrangements and the financial terms of such agreements;

- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims, including litigation costs and the outcome of such litigation; and
- the timing, receipt and amount of sales of, or royalties on, our future products, if any, or products developed by our partners.

Based on our current operating plan, we estimate that the net proceeds we receive from this offering, together with our existing cash and cash equivalents, will be sufficient to fund our projected operating requirements through at least the next 24 months and to fund our Phase 1 clinical studies for XMT-1522 and XMT-1536. Our operating plan, however, may change as a result of many factors currently unknown to us and we may need additional funds sooner than planned. Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate preclinical studies, clinical studies or other development activities for one or more of our ADC product candidates or delay, limit, reduce or terminate our establishment of sales and marketing capabilities or other activities that may be necessary to commercialize our ADC product candidates. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans.

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

We may seek additional capital through a variety of means, including through private and public equity offerings and debt financings. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of such equity or convertible debt securities may include liquidation or other preferences that are senior to or otherwise adversely affect your rights as a stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take certain actions, such as incurring additional debt, making capital expenditures, declaring dividends or encumbering our assets to secure future indebtedness, each of which could adversely impact our ability to conduct our business and execute our operating plan. If we raise additional funds through strategic partnerships with third parties, we may have to relinquish valuable rights to our technologies, including our ADC platforms, or ADC product candidates, or grant licenses on terms that are not favorable to us. If we are unable to raise additional funds through equity or debt financing when needed, we may be required to delay, limit, reduce or terminate our product development or commercialization efforts for XMT-1522, XMT-1536 or any other ADC product candidate, or grant rights to develop and market ADC product candidates that we would otherwise prefer to develop and market ourselves.

We may expend our resources to pursue a particular product candidate and fail to capitalize on product candidates 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 specific product candidates. As a result, we may forgo or delay pursuit of opportunities with other product candidates 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. Failure to properly assess potential product candidates could result in our focus on product candidates with low market potential, which would harm our business and financial condition. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product

candidates. 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 partnering, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Risks related to development and approval of our ADC product candidates

Failure of a discovery program or product candidate may occur at any stage of preclinical or clinical development, and, because our and our partner's discovery programs and our discovery programs and product candidates are in an early stage of preclinical or clinical development, there is a relatively higher risk of failure and we or our partners may never succeed in developing marketable products or generating product revenue.

Our early encouraging preclinical results for XMT-1522 and XMT-1536 are not necessarily predictive of the results of our ongoing or future discovery programs or clinical studies. Promising results in preclinical studies of a drug candidate may not be predictive of similar results in later-stage preclinical studies or in humans during clinical studies. Many companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in late-stage clinical studies after achieving positive results in early-stage development, including early-stage clinical studies, and we cannot be certain that we will not face similar setbacks. These setbacks have been caused by, among other things, preclinical findings made while clinical studies were underway or safety or efficacy observations made in preclinical studies and clinical studies, including previously unreported adverse events.

Any clinical studies that we may conduct may not demonstrate the efficacy and safety necessary to obtain regulatory approval to market our product candidates. If the results of our ongoing or future clinical studies are inconclusive with respect to the efficacy of our ADC product candidates or if we do not meet the clinical endpoints with statistical significance or if there are safety concerns or adverse events associated with our ADC product candidates, we may be prevented or delayed in obtaining marketing approval for our ADC product candidates. There can be significant variability in safety or efficacy results between different clinical studies of the same product candidate due to numerous factors, including changes in study procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the clinical study protocols and the rate of dropout among clinical study participants. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical studies nonetheless failed to obtain FDA approval.

Alternatively, even if we obtain regulatory approval, that approval may be for indications or patient populations that are not as broad as intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We may also be required to perform additional or unanticipated clinical studies to obtain approval or be subject to additional post-marketing testing requirements to maintain regulatory approval. In addition, regulatory authorities may withdraw their approval of a product or impose restrictions on its distribution, such as in the form of a modified Risk Evaluation and Mitigation Strategy, or REMS. The failure to obtain timely regulatory approval of product candidates, any product marketing limitations or a product withdrawal would negatively impact our business, results of operations and financial condition.

We currently have only one ADC product candidate, XMT-1522, in clinical studies. A failure of this product candidate in clinical development would adversely affect our business and may require us to discontinue development of other ADC product candidates based on the same technology.

XMT-1522 is our only clinical-stage development product candidate. While we have certain preclinical programs in development, including XMT-1536, and intend to develop other product candidates, it will take additional investment and time for such programs to reach the same stage of development as XMT-1522. Since all of the product candidates in our current pipeline are ADC product candidates based on the same ADC platform, if XMT-1522 fails in development as a result of any underlying problem with our ADC platform, then we may be required to discontinue development of all ADC product candidates that are based on the same technology. If we were required to discontinue development of XMT-1522 or if XMT-1522 were to fail to receive regulatory approval or were to fail to achieve sufficient market acceptance, we could be prevented from or significantly delayed in achieving profitability.

Delays in the commencement, enrollment or completion of clinical studies of our ADC product candidates could result in increased costs to us as well as a delay or failure in obtaining regulatory approval, or prevent us from commercializing our ADC product candidates on a timely basis, or at all.

We cannot guarantee that clinical studies, including our ongoing Phase 1 clinical study for XMT-1522 and anticipated additional clinical studies for XMT-1522 and XMT-1536, will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical studies can occur at any stage of testing. Events that may prevent successful or timely commencement, enrollment or completion of clinical development include, among others:

- delays by us in reaching a consensus with regulatory agencies on study design;
- delays in reaching, or failing to reach, agreement on acceptable terms with prospective clinical research organizations, or CROs, and clinical study sites;
- difficulties in obtaining required Institutional Review Board, or IRB, approval at each clinical study site;
- challenges in recruiting and enrolling suitable patients to participate in clinical studies that meet the criteria of the protocol for the clinical study;
- imposition of a clinical hold by regulatory agencies or IRBs for any reason, including safety concerns or after an inspection of clinical operations or study sites;
- failure by CROs, other third parties or us to adhere to clinical study requirements;
- failure to perform in accordance with the FDA's good clinical practices, or GCP, or applicable regulatory guidelines in other countries;
- inadequate quantity or quality of a product candidate or other materials necessary to conduct clinical studies, including, for example, delays in the testing, validation, manufacturing and delivery of the ADC product candidates to the clinical sites;
- patients not completing participation in a study or not returning for post-treatment follow-up;
- clinical study sites or patients dropping out of a study;

- safety issues, including occurrence of serious adverse events, or SAEs, in clinical studies that are associated with the ADC product candidates that are viewed to outweigh their potential benefits or unforeseen safety issues in our ongoing preclinical studies;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols; or
- lack of adequate funding to continue the clinical study.

Delays, including delays caused by the above factors, can be costly and could negatively affect our ability to complete a clinical study. If we or our partners are not able to successfully complete clinical studies, we or they will not be able to obtain regulatory approval and will not be able to commercialize our ADC product candidates or our partners' ADC product candidates based on our technology.

An inability to enroll sufficient numbers of patients in our clinical studies could result in increased costs and longer development periods for our product candidates.

Clinical studies require sufficient patient enrollment, which is a function of many factors, including:

- the size and nature of the patient population;
- the severity of the disease under investigation;
- the nature and complexity of the study protocol, including eligibility criteria for the study;
- the number of clinical study sites and the proximity of patients to those sites;
- standard of care in the diseases under investigation;
- the commitment of clinical investigators to identify eligible patients;
- competing studies or trials; and
- clinicians' and patients' perceptions as to the potential advantages and risks of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating.

Challenges in recruiting and enrolling suitable patients to participate in clinical studies that meet the criteria of the protocol for clinical studies could increase costs and result in delays to our current development plan for XMT-1522, XMT-1536 or any other future ADC product candidate.

Clinical development, regulatory review and approval of the FDA and comparable foreign authorities are lengthy, time consuming and inherently unpredictable. If we or our partners are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.

The preclinical studies and clinical studies of our product candidates are, and the manufacturing and marketing of our product candidates will be, subject to extensive and rigorous review and regulation by numerous government authorities in the United States and in other countries where we intend to test and, if approved, market any such product candidate. These government regulations relate to, among other things, development, clinical studies, manufacturing and commercialization. In order to obtain regulatory approval for the commercial sale of any ADC product candidates, we or our partners must demonstrate through extensive preclinical studies and clinical studies that the ADC product candidate is safe and effective for use in each target indication.

The time required to obtain approval by the FDA and comparable foreign authorities is unpredictable, typically takes many years following the commencement of clinical studies and depends upon numerous factors. Of the large number of drugs in development in the United States, only a small percentage will successfully complete the FDA regulatory approval process and will be commercialized. Accordingly, even if we are able to obtain the requisite financing to continue to fund our development and preclinical studies and clinical studies, we cannot assure you that any of our product candidates will be successfully developed or commercialized.

In addition, approval policies, regulations or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions, which may cause delays in the approval or the decision not to approve an application. Regulatory approval has not been obtained for any product candidate based on our ADC technology, and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain regulatory approval. In addition, we may gain regulatory approval for XMT-1522, XMT-1536 or any other ADC product candidate in some but not all of the territories for which we seek approval or some but not all of the target indications, resulting in limited commercial opportunity for the approved ADC product candidates.

Applications for our or our partners' product candidates could be delayed or could fail to receive regulatory approval for many reasons, including but not limited to the following:

- the FDA or comparable foreign regulatory authorities may disagree with the number, design or implementation of our clinical studies;
- the population studied in the clinical program may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical studies;
- the data collected from clinical studies of our product candidates may not meet the level of statistical or clinical significance required by the FDA or comparable foreign regulatory authorities for marketing approval or may otherwise not be sufficient to support the submission of a new drug application, or NDA, or biologics license application, or BLA, or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA may not accept data generated at our preclinical studies and clinical study sites;
- the FDA may require us to conduct additional preclinical studies and clinical studies;
- we may be unable to demonstrate to the FDA or comparable foreign regulatory authorities that a product candidate's risk-benefit ratio for its proposed indication is acceptable;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes, test procedures and specifications or facilities of third-party manufacturers with which we contract for clinical and commercial supplies;
- we or any third-party service providers may be unable to demonstrate compliance with current Good Manufacturing Practices, or cGMPs, to the satisfaction of the FDA or comparable foreign regulatory authorities which could result in delays in regulatory approval or require us to withdraw or recall products and interrupt commercial supply of our products; or

- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Any of these factors, many of which are beyond our control, may result in our failing to obtain regulatory approval to market any of our product candidates, which would significantly harm our business, results of operations and prospects.

If we fail to obtain regulatory approval in jurisdictions outside the United States, we will not be able to market our products in those jurisdictions.

We intend to market our ADC product candidates, including XMT-1522 and XMT-1536, if approved, in international markets either directly or through partnerships. We have entered into an agreement with Takeda to commercialize XMT-1522 outside of the United States and Canada. Such marketing will require separate regulatory approvals in each market and compliance with numerous and varying regulatory requirements. The approval procedures vary from country to country and may require additional testing that we are not required to perform to obtain regulatory approval in the United States. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. In addition, in many countries outside the United States, an ADC drug must be approved for reimbursement before it can be approved for sale in that country. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We or our partners may not obtain foreign regulatory approvals on a timely basis, if at all. We or our partners may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market. If we or any existing or future partner are unable to obtain regulatory approval for XMT-1522 or XMT-1536 in one or more significant foreign jurisdictions, then the commercial opportunity for XMT-1522 or XMT-1536, as applicable, and our financial condition, will be adversely affected.

Even if we receive regulatory approval for our ADC product candidates, such products will be subject to ongoing regulatory review, which may result in significant additional expense. Additionally, our ADC product candidates, if approved, could be subject to labeling and other restrictions, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any regulatory approvals that we receive for our ADC product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to conditions of approval, or contain requirements for potentially costly post-marketing testing and surveillance to monitor safety and efficacy. In addition, if the FDA approves any of our ADC product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMP and GCP, for any clinical studies that we conduct post-approval.

Later discovery of previously unknown problems with an approved ADC drug, including adverse events of unanticipated severity or frequency, or with manufacturing operations or processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls;

- fines, warning letters or holds on clinical studies;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our ADC product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or not able to maintain regulatory compliance, we may lose any marketing approval that may have been obtained and we may not achieve or sustain profitability, which would adversely affect our business.

Our ADC product candidates or ADCs developed or commercialized by our competitors may cause undesirable side effects or have other properties that delay or prevent regulatory approval of our ADC product candidates or limit their commercial potential.

Undesirable side effects caused by our ADC product candidates or ADCs being developed or commercialized by our competitors could cause us or regulatory authorities to interrupt, delay or halt clinical studies and could result in a more restrictive label or the denial of regulatory approval by the FDA or other regulatory authorities and potential product liability claims. Further, clinical studies by their nature utilize a sample of the potential patient population. With a limited number of subjects and limited duration of exposure, rare and severe side effects of our product candidates or those of our competitors may only be uncovered with a significantly larger number of patients exposed to the drug. SAEs deemed to be caused by our ADC product candidates or those of our competitors, either before or after receipt of marketing approval, could have a material adverse effect on the development of our ADC product candidates and our business as a whole.

If we or others identify undesirable side effects caused by our ADC product candidates or those of our competitors either before or after receipt of marketing approval, a number of potentially significant negative consequences could result, including:

- our clinical studies may be put on hold;
- we may be unable to obtain regulatory approval for our ADC product candidates;
- regulatory authorities may withdraw or limit their approvals of our ADC product candidates;
- regulatory authorities may require the addition of labeling statements, such as a contraindication, black box warnings or additional warnings;
- the FDA may require development of a Risk Evaluation and Mitigation Strategy, or REMS, with Elements to Assure Safe Use, or ETASU, as a condition of approval or post-approval;
- we may decide to remove such product candidates from the marketplace;
- we may be subject to regulatory investigations and government enforcement actions;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of our ADC product candidates and could substantially increase commercialization costs.

If we or our third-party collaborators are unable to successfully develop and commercialize any required companion diagnostics for our product candidates or engage a third party to do so, or we or they experience significant delays in doing so, we may not realize the full potential of our product candidates.

If a companion diagnostic is required for the label for XMT-1536 or any of our future product candidates, therefore conditioning our ability to market such product candidates on the commercial availability of an approved companion diagnostic, we may seek approval for our validated assay as a companion diagnostic or we may contract with third parties to create and obtain approval for a companion diagnostic. To be successful in developing and commercializing such a companion diagnostic, we need to address a number of scientific, technical and logistical challenges. We have little experience in the development and commercialization of diagnostics and may not be successful in developing and commercializing appropriate diagnostics to pair with XMT-1536 or any of our other product candidates. Companion diagnostics are subject to regulation by the FDA and equivalent foreign regulatory authorities as medical devices and require separate regulatory approval prior to commercialization. Given our limited experience in developing and commercializing diagnostics, we may rely in part or in whole on third parties for their design, manufacture and commercialization. We, our collaborators or such third parties may encounter difficulties in developing and obtaining approval for the companion diagnostics, including issues relating to selectivity/specificity, analytical validation, reproducibility or clinical validation. Any delay or failure by us, our collaborators or such third parties to develop or obtain regulatory approval of the companion diagnostics could delay or prevent approval of our product candidates. If we, or any third parties that we may contract with to assist us, are unable to successfully develop and commercialize companion diagnostics for our product candidates, or experience delays in doing so:

- the development of XMT-1536 and our product candidates, may be adversely affected if we are unable to appropriately select patients for enrollment in our clinical trials;
- our product candidates may not receive marketing approval if safe and effective use of a therapeutic product candidate depends on the availability of an *in vitro* diagnostic; and
- we may not realize the full commercial potential of any product candidates that receive marketing approval if, among other reasons, we are unable to appropriately select patients who are likely to benefit from therapy with our products.

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

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

We or our partners may fail to discover and develop additional potential product candidates.

Our and our partners' research programs to identify new product candidates will require substantial technical, financial and human resources, and we or our partners may be unsuccessful in our or their efforts to identify new product candidates. If we or our partners are unable to identify suitable additional product candidates for preclinical and clinical development, our or their ability to develop product candidates and our ability to obtain revenues from commercializing our products or to receive royalties from our partners' sales of their products in future periods could be compromised, which could result in significant harm to our financial position and adversely impact our stock price.

Risks related to our reliance on third parties

Because we rely on third-party manufacturing and supply partners, our supply of research and development, preclinical and clinical development materials may become limited or interrupted or may not be of satisfactory quantity or quality.

We rely on third-party contract manufacturers to manufacture our preclinical and clinical study product supplies, and we lack the internal resources and the capability to manufacture any product candidates on a clinical or commercial scale. The facilities used by our contract manufacturers to manufacture the active pharmaceutical ingredient and final drug product must be acceptable to the FDA and other comparable foreign regulatory agencies pursuant to inspections that would be conducted after we submit our marketing application or relevant foreign regulatory submission to the applicable regulatory agency. There can be no assurance that our preclinical and clinical development product supplies will not be limited, interrupted or of satisfactory quality or continue to be available at acceptable prices. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or applicable foreign regulatory agencies, they will not be able to secure or maintain regulatory approval for their manufacturing facilities. Any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements.

The manufacturing process for an ADC product candidate is subject to FDA and foreign regulatory authority review. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by regulatory authorities in order to comply with regulatory standards, such as cGMP. We have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel. In the event that any of our manufacturers fails to comply with regulatory requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all. In some cases, the technical skills or technology required to manufacture our ADC product candidates may be unique or proprietary to the original manufacturer and we may have difficulty transferring such skills or technology to another third party and a feasible alternative may not exist. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third party manufacture our ADC product candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop ADC product candidates in a timely manner or within budget. Our reliance on contract manufacturers also exposes us to

the possibility that they, or third parties with access to their facilities, will have access to and may appropriate our trade secrets or other proprietary information.

We expect to continue to rely on third-party manufacturers if we receive regulatory approval for any ADC product candidate. To the extent that we have existing, or enter into future, manufacturing arrangements with third parties, we will depend on these third parties to perform their obligations in a timely manner consistent with contractual and regulatory requirements, including those related to quality control and assurance. If we are unable to obtain or maintain third-party manufacturing for ADC product candidates, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our ADC product candidates successfully. Our or a third party's failure to execute on our manufacturing requirements and comply with cGMP could adversely affect our business in a number of ways, including:

- an inability to initiate or continue clinical studies of ADC product candidates under development;
- delay in submitting regulatory applications, or receiving regulatory approvals, for ADC product candidates;
- loss of the cooperation of an existing or future strategic partner;
- subjecting third-party manufacturing facilities or our manufacturing facilities to additional inspections by regulatory authorities;
- a requirement to cease distribution or to recall batches of our ADC product candidates; and
- in the event of approval to market and commercialize an ADC product candidate, an inability to meet commercial demands for our products.

We, or our third-party manufacturers, may be unable to successfully scale-up manufacturing of our ADC product candidates in sufficient quality and quantity, which would delay or prevent us from developing our ADC product candidates and commercializing approved products, if any.

In order to conduct clinical studies of our ADC product candidates and commercialize any approved ADC product candidates, we, or our manufacturing partners, will need to manufacture them in large quantities. We, or our manufacturing partners, may be unable to successfully increase the manufacturing capacity for any of our product candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If we, or any manufacturing partners, are unable to successfully scale up the manufacture of our ADC product candidates in sufficient quality and quantity, the development, testing and clinical studies of that ADC product candidates may be delayed or infeasible, and regulatory approval or commercial launch of any resulting product may be delayed or not obtained, which could significantly harm our business. We are currently evaluating which third-party manufactures to engage for scale-up to commercial supply of our ADC product candidates, including XMT-1522 and XMT-1536. If we are unable to obtain or maintain third-party manufacturing for commercial supply of ADC product candidates, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our ADC product candidates successfully.

We rely on third parties to conduct preclinical studies and clinical studies for XMT-1522 and XMT-1536, and if they do not properly and successfully perform their obligations to us, we may not be able to obtain regulatory approvals for XMT-1522 or XMT-1536 or any other ADC product candidates that we may develop in the future.

We have designed the Phase 1 clinical study for XMT-1522 and intend to design any future clinical study for any future unpartnered ADC product candidates that we may develop, including XMT-1536 if preclinical studies are successful. However, we rely on CROs and other third parties to assist in managing, monitoring and otherwise carrying out many of these studies. As a result, we have less direct control over the conduct, timing and completion of these clinical studies and the management of data developed through clinical studies than would be the case if we were relying entirely upon our own staff. These CROs and other third parties are not our employees and we have limited control over the amount of time and resources that they dedicate to our programs. We compete with many other companies for the resources of these third parties. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw time and resources from our programs. The third parties with whom we contract might not be diligent, careful or timely in conducting our preclinical studies or clinical studies, resulting in the preclinical studies or clinical studies being delayed or unsuccessful.

The third parties on whom we rely generally may terminate their engagements at any time, and having to enter into alternative arrangements would delay development and commercialization of our ADC product candidates. Communicating with outside parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities. Outside parties may:

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

The FDA and comparable foreign regulatory authorities require compliance with regulations and standards, including GCP, for designing, conducting, monitoring, recording, analyzing and reporting the results of clinical studies to assure that the data and results are credible and accurate and that the rights, integrity and confidentiality of study participants are protected. Although we rely, and intend to continue to rely, on third parties to conduct our clinical studies, they are not our employees, and we are responsible for ensuring that each of these clinical studies is conducted in accordance with its general investigational plan, protocol and other requirements. Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities.

If these third parties do not successfully carry out their duties under their agreements, if the quality or accuracy of the data they obtain is compromised due to their failure to adhere to clinical study protocols or to regulatory requirements, or if they otherwise fail to comply with clinical study protocols or meet expected deadlines, the clinical studies of our ADC product candidates may not meet regulatory requirements. The FDA enforces GCP regulations through periodic inspections of clinical study sponsors, principal investigators and study sites. If we or our CROs fail to comply with applicable GCPs or other regulatory requirements, the clinical data generated in our clinical studies may be deemed unreliable, third parties may need to be replaced and preclinical development activities or clinical studies may be extended,

delayed, suspended or terminated. If any of these events occur, we may not be able to obtain regulatory approval of our ADC product candidates on a timely basis or at all.

We depend on strategic partnerships with other companies to assist in the research, development and commercialization of our ADC platforms and ADC product candidates. If our existing partners do not perform as expected, this may negatively affect our ability to commercialize our ADC product candidates, including XMT-1522, or generate revenues through technology licensing, or may otherwise negatively affect our business.

We have established strategic partnerships and intend to continue to establish strategic partnerships with third parties to research, develop and commercialize our ADC platforms and existing and future ADC product candidates. We entered into a collaboration agreement with Takeda in January 2016 for the co-development of XMT-1522 that granted Takeda rights to commercialize XMT-1522 outside of the United States and Canada. We also have entered into another collaboration agreement with Takeda and a collaboration agreement with Merck KGaA for the development and commercialization of other ADC product candidates. For certain of these programs, we will depend on our partners to design and conduct their clinical studies. As a result, we may not be able to conduct these programs in the manner or on the time schedule we currently contemplate, which may negatively impact our business operations. In addition, if any of these partners withdraw support for these programs or proposed products or otherwise impair their development, our business could be negatively affected.

Our partners may terminate their agreements with us for cause under certain circumstances or at will in certain cases and discontinue use of our technologies. In addition, we cannot control the amount and timing of resources our partners may devote to products utilizing or incorporating our technology. Moreover, our relationships with our partners may divert significant time and effort of our scientific staff and management team and require effective allocation of our resources to multiple internal and collaborative projects. Our partners may fail to perform their obligations under the collaboration agreements or may not perform their obligations in a timely manner. If conflicts arise between our partners and us, the other party may act in a manner adverse to us and could limit our ability to implement our strategies. If any of our partners terminate or breach our agreements with them, or otherwise fail to complete their obligations in a timely manner, it may have a detrimental effect on our financial position by reducing or eliminating the potential for us to receive technology access and license fees, milestones and royalties, reimbursement of development costs, as well as possibly requiring us to devote additional efforts and incur costs associated with pursuing internal development of product candidates. Furthermore, if our partners do not prioritize and commit sufficient resources to programs associated with our product candidates or collaboration product candidates, we or our partners may be unable to commercialize these product candidates, which would limit our ability to generate revenue and become profitable.

In particular, if Takeda were to terminate the XMT-1522 strategic partnership, we would not receive milestone payments, co-funded development payments or, following approval, royalties for the sale of XMT-1522 outside the United States and Canada. As a result of such termination, we would have to engage another strategic partner to complete the XMT-1522 development process and to commercialize XMT-1522 outside the United States and Canada, or to complete the development process and undertake commercializing XMT-1522 outside the United States and Canada ourselves, either of which could significantly delay the continued development and commercialization of XMT-1522 and would increase our costs. In turn, this could significantly harm our financial position, adversely affect our stock price and require us to incur all the costs of developing and commercializing XMT-1522, which are now being co-funded by Takeda.

Our partners may separately pursue competing products, therapeutic approaches or technologies to develop treatments for the diseases targeted by us or our partners. Competing products, either developed by the partners or to which the partners have rights, may result in the withdrawal of partner support for our product candidates. Even if our partners continue their contributions to the strategic partnerships, they may nevertheless determine not to actively pursue the development or commercialization of any resulting products. Any of these developments could harm our product development efforts.

To date, we have depended on a small number of partners for a substantial portion of our revenue. The loss of any one of these partners could result in a material decline in our revenue.

We have strategic partnerships with a limited number of companies. To date, a substantial portion of our revenue has resulted from payments made under agreements with our strategic partners, and we expect that a portion of our revenue will continue to come from strategic partnerships. If XMT-1522 receives regulatory approval, our revenues will still depend in part on Takeda's ability and willingness to market the approved product outside of the United States and Canada. The loss of our partners, especially Takeda, or the failure of our partners to perform their obligations under their agreements with us, including paying license or technology fees, milestone payments, royalties or reimbursements, could have a material adverse effect on our financial performance. Payments under our existing and future strategic partnerships are also subject to significant fluctuations in both timing and amount, which could cause our revenue to fall below the expectations of securities analysts and investors and cause a decrease in our stock price.

We may not be successful in establishing and maintaining additional strategic partnerships, which could adversely affect our ability to develop and commercialize products, negatively impacting our operating results.

We continue to strategically evaluate our partnerships and, as appropriate, we expect to enter into additional strategic partnerships in the future, including potentially with major biotechnology or biopharmaceutical companies. We face significant competition in seeking appropriate partners for our ADC product candidates, and the negotiation process is time-consuming and complex. In order for us to successfully partner our ADC product candidates, potential partners must view these ADC product candidates as economically valuable in markets they determine to be attractive in light of the terms that we are seeking and other available products for licensing by other companies. Even if we are successful in our efforts to establish strategic partnerships, the terms that we agree upon may not be favorable to us, and we may not be able to maintain such strategic partnerships if, for example, development or approval of an ADC product candidate is delayed or sales of an approved product are disappointing. Any delay in entering into strategic partnership agreements related to our ADC product candidates could delay the development and commercialization of such candidates and reduce their competitiveness even if they reach the market. If we are not able to generate revenue under our strategic partnerships when and in accordance with our expectations or the expectations of industry analysts, this failure could harm our business and have an immediate adverse effect on the trading price of our common stock.

If we fail to establish and maintain additional strategic partnerships related to our unpartnered ADC product candidates, we will bear all of the risk and costs related to the development of any such ADC product candidate, and we may need to seek additional financing, hire additional employees and otherwise develop expertise, such as regulatory expertise, for which we have not budgeted. If we were not successful in seeking additional financing, hiring additional employees or developing additional expertise, our cash burn rate would increase or we would need to take steps to reduce our rate of ADC product candidate development. This could negatively affect the development of any unpartnered ADC product candidate.

Risks related to commercialization of our ADC product candidates

Our future commercial success depends upon attaining significant market acceptance of our ADC product candidates, if approved, among physicians, patients and health care payors.

Even if we obtain regulatory approval for XMT-1522, XMT-1536 or any other ADC product candidates that we may develop or acquire in the future, the product candidate may not gain market acceptance among physicians, health care payors, patients and the medical community. Market acceptance of any approved products depends on a number of factors, including:

- the efficacy and safety of the product, as demonstrated in clinical studies;
- the indications for which the product is approved and the label approved by regulatory authorities for use with the product, including any warnings that may be required on the label;
- acceptance by physicians and patients of the product as a safe and effective treatment;
- the cost, safety and efficacy of treatment in relation to alternative treatments;
- the availability of adequate reimbursement and pricing by third-party payors and government authorities;
- relative convenience and ease of administration;
- the prevalence and severity of adverse side effects; and
- the effectiveness of our sales and marketing efforts.

Perceptions of any product are influenced by perceptions of competitors' products that are in the same class of drugs or have a similar mechanism of action. As a result, adverse public perception of our competitors' ADC products may negatively impact the market acceptance of our ADC product candidates. Market acceptance is critical to our ability to generate significant revenue and become profitable. Any therapeutic candidate, if approved and commercialized, may be accepted in only limited capacities or not at all. If any approved products are not accepted by the market to the extent that we expect, we may not be able to generate significant revenue and our business would suffer.

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

The precise incidence and prevalence of breast cancer, NSCLC and gastric cancer with low HER2 expression and of epithelial ovarian cancer and non-squamous NSCLC with NaPi2b expression are unknown. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our drug candidates, are based on estimates. The total addressable market opportunity for XMT-1522 for the treatment of patients with breast cancer, NSCLC and gastric cancer with HER2 expression and XMT-1536 for the treatment of epithelial ovarian cancer and non-squamous NSCLC with NaPi2b expression will ultimately depend upon, among other things, the diagnosis criteria included in the final label for each of XMT-1522 and XMT-1536, if our drug candidates are approved for sale for these indications, acceptance by the medical community and patient access, drug pricing and reimbursement. The number of patients who can be treated with our drug candidates may turn out to be lower than expected, patients may not be otherwise amenable to treatment

with our drugs, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

If we are unable to establish sales, marketing and distribution capabilities, we may not be successful in commercializing our product candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have no experience in the sale, marketing or distribution of products. To achieve commercial success for any product for which we have obtained marketing approval, we will need to establish a sales and marketing organization.

In the future, we expect to build a focused sales and marketing infrastructure to market XMT-1522 in the United States and Canada, if and when it is approved, and to market XMT-1536 and other ADC product candidates in the United States and certain foreign jurisdictions, if and when they are approved. There are risks involved with establishing our own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

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

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

If we are unable to establish our own sales, marketing and distribution capabilities and enter into arrangements with third parties to perform these services, our product revenues and our profitability, if any, are likely to be lower than if we were to market, sell and distribute any products that we develop ourselves.

In addition, we may not be successful in entering into arrangements with third parties to sell, market and distribute certain of our product candidates outside of the United States or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we do not establish sales, marketing and distribution capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

Reimbursement may be limited or unavailable in certain market segments for our ADC product candidates, which could make it difficult for us to sell our products profitably.

In both domestic and foreign markets, sales of any of our product candidates, if approved, will depend, in part, on the extent to which the costs of our products will be covered by third-party payors, such as government health programs, commercial insurance and managed health care organizations. These third

party payors decide which drugs will be covered and establish reimbursement levels for those drugs. The containment of health care costs has become a priority of foreign and domestic governments as well as private third party payors. The prices of drugs have been a focus in this effort. Governments and private third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications, which could affect our ability to sell our product candidates profitably. Cost-control initiatives could cause us to decrease the price we might establish for products, which could result in lower than anticipated product revenues.

Reimbursement by a third-party payor may depend upon a number of factors, including the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Adverse pricing limitations may hinder our ability to recoup our investment in XMT-1522, XMT-1536 or any future ADC product candidates, even if such product candidates obtain marketing approval.

Obtaining coverage and reimbursement approval for a product from a government or other third-party payor is a time consuming and costly process that could require us to provide supporting scientific, clinical and cost-effectiveness data for the use of our products to the payor. Further, there is significant uncertainty related to third-party payor coverage and reimbursement of newly approved drugs. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. We cannot be sure that coverage or adequate reimbursement will be available for any of our ADC product candidates. Also, we cannot be sure that reimbursement amounts will not reduce the demand for, or the price of, our products. If reimbursement is not available or is available only to limited levels, we may not be able to commercialize certain of our products. In addition, in the United States, third-party payors are increasingly attempting to contain health care costs by limiting both coverage and the level of reimbursement of new drugs. As a result, significant uncertainty exists as to whether and how much third-party payors will reimburse patients for their use of newly approved drugs, which in turn will put pressure on the pricing of drugs.

Price controls may be imposed in foreign markets, which may adversely affect our future profitability.

In some countries, including member states of the European Union, the pricing of prescription drugs is subject to governmental control. Additional countries may adopt similar approaches to the pricing of prescription drugs. In such countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we may be required to conduct a clinical study or other studies that compare the cost-effectiveness of our ADC product candidates to other available therapies in order to obtain or maintain reimbursement or pricing

approval. We cannot be sure that such prices and reimbursement will be acceptable to us or our strategic partners. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If pricing is set at unsatisfactory levels or if reimbursement of our products is unavailable or limited in scope or amount, our revenues from sales by us or our strategic partners and the potential profitability of our ADC product candidates in those countries would be negatively affected.

The impact of recent health care reform legislation and other changes in the health care industry and in health care spending on us is currently unknown and may adversely affect our business model.

Our revenue prospects could be affected by changes in health care spending and policy in the United States and abroad. We operate in a highly regulated industry and new laws, regulations or judicial decisions, or new interpretations of existing laws, regulations or decisions, related to health care availability, the method of delivery or payment for health care products and services could negatively impact our business, operations and financial condition.

The United States and state governments continue to propose and pass legislation designed to reduce the cost of health care. In March 2010, the U.S. Congress enacted the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act, or the Health Care Reform Act, which include changes to the coverage and reimbursement of drug products under government health care programs such as:

- increasing drug rebates under state Medicaid programs for brand name prescription drugs and extending those rebates to Medicaid managed care;
- extending discounted rates on drug products available under the Public Health Service pharmaceutical pricing program to additional hospitals and other providers;
- assessing a fee on manufacturers and importers of brand name prescription drugs reimbursed under certain government programs, including Medicare and Medicaid; and
- requiring drug manufacturers to provide a 50% discount on Medicare Part D brand name prescription drugs sold to Medicare beneficiaries whose prescription drug costs cause the beneficiaries to be subject to the Medicare Part D coverage gap (i.e., the so-called ‘‘donut hole’’).

It is likely that federal and state legislatures within the United States and foreign governments will continue to consider changes to existing health care legislation. We cannot predict the reform initiatives that may be adopted in the future or whether initiatives that have been adopted will be repealed or modified. The continuing efforts of the government, insurance companies, managed care organizations and other payors of health care services to contain or reduce costs of health care may adversely affect:

- the demand for any products for which we may obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to obtain coverage and reimbursement approval for a product;
- our ability to generate revenues and achieve or maintain profitability; and
- the level of taxes that we are required to pay.

Modifications to or repeal of all or certain provisions of the Health Care Reform Act are expected as a result of the outcome of the 2016 presidential election and Congressional Republicans maintaining control

of Congress, consistent with statements made by Donald Trump and members of Congress during the presidential campaign and following the election. We cannot predict the ultimate content, timing or effect of any changes to the Healthcare Reform Act, and significant changes to, or repeal of, the Healthcare Reform Act could have a material adverse effect on our business, financial condition and profitability.

In addition, other legislative changes have been proposed and adopted since the 2010 health care reform legislation. The Budget Control Act of 2011, as amended, or the Budget Control Act, includes provisions intended to reduce the federal deficit. The Budget Control Act resulted in the imposition of 2% reductions in Medicare payments to providers beginning in 2013. Recent legislation extends reductions through 2023. Any significant spending reductions affecting Medicare, Medicaid or other publicly funded or subsidized health programs that may be implemented, or any significant taxes or fees that may be imposed on us, as part of any broader deficit reduction effort or legislative replacement to the Budget Control Act, could have an adverse impact on our anticipated product revenues.

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

The biotechnology and biopharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. Many third parties compete with us in developing various approaches to cancer therapy. They include pharmaceutical companies, biotechnology companies, academic institutions and other research organizations. Any treatments developed by our competitors could be superior to our ADC product candidates. It is possible that these competitors will succeed in developing technologies that are more effective than our ADC platforms or ADC product candidates or that would render our ADC platforms obsolete or noncompetitive. We anticipate that we will face increased competition in the future as additional companies enter our market and scientific developments surrounding other cancer therapies continue to accelerate.

We are also aware of multiple companies with ADC technologies that may be competitive to our ADC platforms, including Astellas, AstraZeneca, Bristol-Myers Squibb, Daiichi Sankyo, ImmunoGen, Immunomedics, Pfizer and Seattle Genetics. These companies or their partners, including AbbVie, Genentech, Lilly, Novartis, Sanofi and Takeda, may develop ADC product candidates which compete in the same indications as our current and future ADC product candidates. There are approximately 60 ADC product candidates in active clinical development. There are currently two approved ADC therapies in the United States: brentuximab vedotin, marketed by Seattle Genetics and Takeda, and ado-trastuzumab emtansine, marketed by Genentech. Ado-trastuzumab emtansine is a HER2 targeted ADC approved for use in HER2 positive patients and, even though we are developing, and expect to get approval for, XMT-1522 for lower expressing HER2 patients, ado-trastuzumab emtansine may compete with our HER2 targeted ADC, XMT-1522, if XMT-1522 is approved. We expect to compete on improved efficacy, safety and tolerability compared to other ADC product candidates and if our products are not demonstrably superior in these respects compared to other approved therapeutics, we may not be able to compete effectively.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical studies, obtaining regulatory approval and marketing than we do. In addition, many of these competitors are active in seeking patent protection and licensing arrangements in anticipation of collecting royalties for use of technology that they have developed. Smaller or early-stage companies may also prove to be significant competitors, particularly through strategic partnerships with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, as well as in acquiring technologies complementary to our programs.

In addition, if our product candidates are approved and commercialized, we may face competition from biosimilars. The route to market for biosimilars was established with the passage of the Health Care Reform Act in March 2010. The Health Care Reform Act establishes a pathway for the FDA approval of follow-on biologics and provides twelve years data exclusivity for reference products and an additional six months exclusivity period if pediatric studies are conducted. In Europe, the European Medicines Agency has issued guidelines for approving products through an abbreviated pathway, and biosimilars have been approved in Europe. If a biosimilar version of one of our potential products were approved in the U.S. or Europe, it could have a negative effect on sales and gross profits of the potential product and our financial condition.

With respect to our current and potential future product candidates, we believe that our ability to compete effectively and develop products that can be manufactured cost-effectively and marketed successfully will depend on our ability to:

- advance our technology platforms;
- obtain and maintain intellectual property protection for our technologies and products;
- obtain required government and other public and private approvals on a timely basis;
- attract and retain key personnel;
- commercialize effectively;
- obtain reimbursement for our products in approved indications;
- comply with applicable laws, regulations and regulatory requirements and restrictions with respect to the commercialization of our products, including with respect to any changed or increased regulatory restrictions; and
- enter into additional strategic partnerships to advance the development and commercialization of our product candidates.

Risks related to our intellectual property

If we are unable to obtain or protect intellectual property rights related to our technology and ADC product candidates, or if our intellectual property rights are inadequate, we may not be able to compete effectively.

Our success depends in large part on our ability to obtain and maintain protection with respect to our intellectual property and proprietary technology. We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our ADC platforms, XMT-1522 and XMT-1536. The patent position of biopharmaceutical companies is generally uncertain because it involves complex legal and factual considerations and has, in recent years, been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights is highly uncertain. The standards applied by the United States Patent and Trademark Office, or USPTO, and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in patents. In addition, 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 patent prosecution process is expensive, complex and time-consuming, and we may

not be able to file, prosecute, maintain, enforce or license all necessary or desirable patents and patent applications at a reasonable cost or in a timely manner. It is also possible that we fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found. We may be unaware of prior art that could be used to invalidate an issued patent or prevent our pending patent applications from issuing as patents.

The patent applications that we own or in-license may fail to result in issued patents, and even if they do issue as patents, such patents may not cover our ADC platforms and ADC product candidates in the United States or in other countries. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may results in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. For example, even if patent applications we license or own do successfully issue as patents and even if such patents cover our ADC platforms and ADC product candidates, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed or invalidated. Furthermore, even if they are unchallenged, our patents and patent applications may not provide adequate protection or exclusivity for our ADC platform or ADC product candidates, prevent others from designing around our claims or otherwise provide us with a competitive advantage. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

If patent applications we own or have in-licensed with respect to our ADC platforms or our ADC product candidates fail to issue as patents, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity, it could dissuade companies from collaborating with us. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patents or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful challenge to these patents or any other patents owned by or licensed to us could deprive us of rights necessary for the successful development and commercialization of any ADC product candidate. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we were the first to file any patent application related to an ADC product candidate. Furthermore, if third parties have filed such patent applications, an interference proceeding in the United States can be initiated by the USPTO or a third-party to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available; however, the life of a patent and the protection it affords is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, our owned or in-licensed patents protecting such candidates might expire before or shortly after such candidates are commercialized. If we encounter delays in obtaining regulatory approvals, the period of time during which we could market an ADC drug under patent protection could be further reduced. Even if patents covering our ADC product candidates are obtained, once the patent life has expired for a product, we may be open to competition from similar or generic products. The launch of a generic version of one of our products in particular would be likely to result in an immediate and substantial reduction in the demand for our product, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law, which could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art, may affect patent litigation and switch the U.S. patent system from a ''first-to-invent'' system to a ''first-to-file'' system. Under a first-to-file system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to the patent on an invention regardless of whether another inventor had made the invention earlier. These provisions also allow third-party submission of prior art to the USPTO during patent prosecution and set forth additional procedures to attack the validity of a patent by the USPTO administered post grant proceedings. The USPTO developed additional regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and, in particular, the first-to-file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Any loss of patent protection could have a material adverse impact on our business. We may be unable to prevent competitors from entering the market with a product that is similar to or the same as our ADC product candidates.

Issued patents covering XMT-1522 and XMT-1536 and any future ADC product candidates could be found invalid or unenforceable if challenged in court or before the USPTO or comparable foreign authority.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of XMT-1522, XMT-1536 or any other future product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Grounds for a validity challenge could be, among other things, an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, lack of written description or non-enablement. Grounds for an unenforceability assertion could be, among other things, an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, inter partes review, post-grant review, interference proceedings, derivation proceedings and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation, cancellation or amendment to our patents in such a way that they no longer cover and protect our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity of our patents, for example, we cannot be certain that there is no invalidating prior art of which we, our licensors, our patent counsel and the patent examiner were unaware during prosecution. If a third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on one or more of our product candidates. Any such loss of patent protection could have a material adverse impact on our business, financial condition, results of operations and prospects.

If we fail to comply with our obligations under any license, strategic partnership or other agreements, we may be required to pay damages and could lose intellectual property rights that are necessary for developing and protecting our product candidates.

We rely, in part, on license, collaboration and other agreements. We may need to obtain additional licenses from others to advance our research or allow commercialization of our product candidates and it is possible that we may be unable to obtain additional licenses at a reasonable cost or on reasonable terms, if at all. The licensing or acquisition of third party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to use. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment.

In addition, our existing licenses and collaboration agreements, including our license with Recepta for intellectual property covering the NaPi2b antibody in XMT-1536 and our agreement with Adimab under which we acquired Adimab's rights to XMT-1519, the antibody in XMT-1522, and were granted a license to certain intellectual property controlled by Adimab to exploit ADC product candidates containing XMT-1519, including XMT-1522, impose, and any future licenses, collaborations or other agreements we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement or other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license, including, in the case of our agreement with Recepta, the license for the rights covering the NaPi2b antibody in XMT-1536. In addition, if we breach certain obligations under our agreement with Adimab, Adimab may have the right to reacquire the rights to XMT-1519. Any of the foregoing could result in us being unable to develop, manufacture and sell products that are covered by the licensed technology or enable a competitor to gain access to the licensed technology. Disputes may arise regarding intellectual property subject to a licensing, collaboration or other agreements, including:

- the scope of rights granted under the license agreement and other interpretation related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, the agreements under which we currently license intellectual property or technology to or from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of

which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

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 the technology that we license from third parties. For example, pursuant to our license agreement with Recepta, Ludwig Institute for Cancer Research Ltd., a co-owner of the intellectual property, retains control of such activities. Therefore, we cannot be certain that these patents and applications will be prosecuted, maintained and enforced in a manner consistent with the best interests of our business. If our licensors fail to obtain or maintain such intellectual property, or lose rights to such intellectual property, the rights we have licensed and our exclusivity may be reduced or eliminated and our right to develop and commercialize any of our products that are subject to such licensed rights could be adversely affected.

Moreover, our rights to our in-licensed patents and patent applications are dependent, in part, on inter-institutional or other operating agreements between the joint owners of such in-licensed patents and patent applications. If one or more of such joint owners breaches such inter-institutional or operating agreements, our rights to such in-licensed patents and patent applications may be adversely affected. In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

If we are unable to successfully obtain rights to required third party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant program or product candidate and our business, financial condition, results of operations and prospects could suffer.

We may become involved in lawsuits to protect or enforce our intellectual property or to defend against intellectual property claims, which could be expensive, time consuming and unsuccessful.

Competitors and other third parties may infringe our patents or misappropriate or otherwise violate our owned and in-licensed intellectual property rights. To counter infringement or unauthorized use, litigation or other intellectual property proceedings may be necessary to enforce or defend our owned and in-licensed intellectual property rights, to protect our trade secrets or to determine the validity and scope of our own intellectual property rights or the proprietary rights of others. Such litigation or proceedings can be expensive and time consuming, and any such claims could provoke defendants to assert counterclaims against us, including claims alleging that we infringe their patents or other intellectual property rights. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Many of our current and potential competitors have the ability to dedicate substantially greater resources to litigate intellectual property rights than we can and have more mature and developed intellectual property portfolios. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property. Even if resolved in our favor, litigation or other intellectual property proceedings could result in substantial costs and diversion of management attention and resources, which could harm our business and financial results.

In addition, in a litigation or other proceeding, a court or administrative judge may decide that a patent owned by or licensed to us is invalid or unenforceable, or a court 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 or other proceeding could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation and other proceedings, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. During the course of any patent or other intellectual property litigation or other proceeding, there could be public announcements of the results of hearings, rulings on motions and other interim proceedings or developments and if securities analysts or investors regard these announcements as negative, the perceived value of our ADC product candidates, programs or intellectual property could be diminished. Accordingly, the market price of our common stock may decline. Any of the foregoing could have a material adverse effect on our business, financial conditions, results of operations and prospects.

Third-party claims of intellectual property infringement or misappropriation may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our ability and the ability of our strategic partners to develop, manufacture, market and sell product candidates and use our proprietary technologies without infringing, misappropriating or otherwise violating the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biopharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, reexamination, *inter partes* review, derivation and post grant review proceedings before the USPTO and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing and may develop our ADC product candidates. As the biopharmaceutical industries expand and more patents are issued, the risk increases that our ADC product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we, our customers, licensees or parties indemnified by us are employing their proprietary technology without authorization or have infringed upon, misappropriated or otherwise violated their intellectual property or other rights, regardless of their merit. For example, we may be subject to claims that we are infringing the patent, trademark or copyright rights of third parties, or that our employees have misappropriated or divulged their former employers' trade secrets or confidential information. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our ADC product candidates, that we failed to identify. For example, applications filed before November 29, 2000 and certain applications filed after that date that will not be filed outside the United States remain confidential until issued as patents. Except for certain exceptions, including the preceding exceptions, patent applications in the United States and elsewhere are generally published only after a waiting period of approximately 18 months after the earliest filing, and sometimes not at all. Therefore, patent applications covering our ADC platforms or our ADC product candidates could have been filed by others without our knowledge. Additionally, pending patent applications which have been published can, subject to certain limitations, be later amended in a manner that could cover our ADC platforms, our ADC product candidates or the use or manufacture of our ADC product candidates.

Even if we believe a third party's claims against us are without merit, a court of competent jurisdiction could hold that such third party's patent is valid, enforceable and cover aspects of our product candidates, including the materials, formulations, methods of manufacture, methods of analysis, or methods for

treatment, in which case, such third party would be able to block our ability to develop and commercialize the applicable technology or product candidate until such patent expired or unless we obtain a license and we may be required to pay such third party monetary damages, which could be substantial. Such licenses may not be available on acceptable terms, if at all. Even if we were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property and it could require us to make substantial licensing and royalty payments. Ultimately, we could be prevented from commercializing a product, or be forced to cease some aspect of our business operations, if, as a result of actual or threatened patent infringement claims, we are unable to enter into licenses on acceptable terms.

Parties making claims against us may also obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our ADC technology or one or more of our ADC product candidates. Defending against claims of patent infringement, misappropriation of trade secrets or other violations of intellectual property could be costly and time consuming, regardless of the outcome. Thus, even if we were to ultimately prevail, or to settle at an early stage, such litigation could burden us with substantial unanticipated costs. In addition, litigation or threatened litigation could result in significant demands on the time and attention of our management team, distracting them from the pursuit of other company business. In the event of a successful claim of infringement against us, in addition to potential injunctive relief, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

We may face a claim of misappropriation if a third party believes that we inappropriately obtained and used trade secrets of such third party. If we are found to have misappropriated a third party's trade secrets, we may be prevented from further using such trade secrets, limiting our ability to develop our ADC product candidates, we may be required to obtain a license to such trade secrets which may not be available on commercially reasonable terms or at all and may be non-exclusive, and we may be required to pay damages, which could be substantial. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may not be able to protect our intellectual property and proprietary rights throughout the world.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world where we expect there to be significant markets for our products could be prohibitively expensive, and the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. In addition, our intellectual property license agreements may not always include worldwide rights. For example, certain U.S. and foreign issued patents and patent applications are licensed to us by Recepta on a worldwide basis, except that Recepta retains exclusive rights in such patents and patent applications in Brazil. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection or licenses but enforcement is not as strong as that in the United States. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Additionally, the laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. The legal systems of certain countries,

particularly certain developing countries, do not favor the enforcement of patents and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our licensed and owned patents or marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing as patents, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations and prospects may be adversely affected.

Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our platform technology and discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants and outside scientific advisors, contractors and partners. We cannot guarantee that we have entered into such agreement with each party that may have or have had access to our trade secrets or proprietary technology and processes. Additionally, our confidentiality agreements and other contractual protections may not be adequate to protect our intellectual property from unauthorized disclosure, third-party infringement or misappropriation. We may not have adequate remedies in the case of a breach of any such agreements, and our trade secrets and other proprietary information could be disclosed to our competitors or others may independently develop substantially equivalent or superior proprietary information and techniques or otherwise gain access to our trade secrets or disclose such technologies.

Enforcing a claim that a third party illegally obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, some courts outside and within the United States sometimes are less willing to protect trade secrets. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business.

We may be subject to claims by third parties asserting that our licensors, employees, consultants, advisors or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our and our licensors' employees, including our senior management, consultants or advisors are currently, or previously were, employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Some of these employees, including members of our senior management, executed proprietary rights, non-disclosure and non-competition agreements, or similar agreements, in connection with such previous employment. Although we try to ensure that our employees, consultants and advisors 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 individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. Litigation may be necessary to defend against such claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel or sustain damages. Such intellectual property rights could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products. Such a license may not be available on commercially reasonable terms or at all. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management. Any of the foregoing may have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we do not obtain patent term extension and data exclusivity for any product candidates we may develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of our owned or in-licensed U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, or Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term extension of up to five years as compensation for the patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our business, financial condition, results of operations and prospects could be materially harmed.

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

Periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents and patent applications will be due to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our owned or licensed patents and applications. In certain circumstances, we rely on our licensing partners to pay these fees due to U.S. and non-U.S. patent agencies. The USPTO and various non-U.S. government agencies require compliance with several procedural, documentary, fee payment and other similar provisions during the patent application process. We are also dependent on our licensors to take the necessary action to comply with these requirements with respect to our licensed intellectual property. In some cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in a partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market with similar or identical products or technology, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make ADC products that are similar to any product candidates we may develop or utilize similar ADC-related technology but that are not covered by the claims of the patents that we license or may own in the future;
- we, or our license partners or current or future strategic partners, might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we, or our license partners or current or future strategic partners, might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- it is possible that our pending licensed patent applications or those that we may own in the future will not lead to issued patents;
- issued patents that we hold rights to may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may harm our business; and

- we may choose not to file a patent in order to maintain certain trade secrets or know how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks related to our business and industry

If we fail to attract and keep senior management and key scientific personnel, we may be unable to successfully develop our ADC product candidates, conduct our clinical studies and commercialize our ADC product candidates.

Our ability to compete in the highly competitive biotechnology and biopharmaceutical industries depends upon our ability to attract, motivate and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on members of our senior management, including Anna Protopapas, our President and Chief Executive Officer, and Donald Bergstrom, Chief Medical Officer. The loss of the services of any of these persons could impede the achievement of our research, development and commercialization objectives. Also, each of these persons may terminate their employment with us at any time. We do not maintain ''key person'' insurance for any of our executives or other employees.

Recruiting and retaining qualified scientific, clinical, sales and marketing personnel will also be critical to our success. We conduct our operations at our facility in Cambridge, Massachusetts, in a region that is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel is intense and the turnover rate can be high, which may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all. 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. 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.

We may encounter difficulties in managing our growth and expanding our operations successfully.

As we seek to advance our ADC product candidates through clinical studies and commercialization, we will need to expand our development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with various strategic partners, suppliers and other third parties. Future growth will impose significant added responsibilities on members of management. Our future financial performance and our ability to commercialize our ADC product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to manage our development efforts and clinical studies effectively and hire, train and integrate additional management, administrative and, if necessary, sales and marketing personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to accomplish these tasks, and our failure to accomplish any of them could prevent us from successfully growing our company or disrupt our operations.

Our relationships with health care professionals, institutional providers, principal investigators, consultants, customers (actual and potential) and third-party payors are, and will continue to be, subject, directly and indirectly, to federal and state health care fraud and abuse, false claims, marketing expenditure tracking and disclosure, government price reporting and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face penalties, including, without limitation, civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other federal health care programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations.

Our business operations and activities may be directly or indirectly subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act. If we obtain FDA approval for any of our ADC product candidates and begin commercializing those products in the United States, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. These laws may impact, among other things, our current activities with principal investigators and research subjects, as well as proposed and future sales, marketing and education programs. In addition, we may be subject to patient privacy regulation by the federal government and state governments in which we conduct our business. The laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal health care program, such as the Medicare and Medicaid programs;

- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid or other third-party payors that are false or fraudulent or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any health care benefit program or obtain, by means of false or fraudulent pretenses, representations or promises, any of the money or property owned by, or under the custody or control of, any health care benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing, or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, health care benefits, items or services relating to health care matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 and their respective implementing regulations, which impose requirements on certain covered health care providers, health plans, and health care clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization;

- the federal physician self-referral law, commonly known as the Stark Law, which prohibits a physician from making a referral to an entity for certain designated health services reimbursed by Medicare or Medicaid if the physician or a member of the physician's family has a financial relationship with the entity, and which also prohibits the submission of any claims for reimbursement for designated health services furnished pursuant to a prohibited referral;
- the federal Physician Payments Sunshine Act, created under Section 6002 of the Health Care Reform Act, and its implementing regulations requires manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members, with data collection required beginning August 1, 2013 and reporting to the Centers for Medicare & Medicaid Services required by March 31, 2014 and by the 90th day of each subsequent calendar year;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- federal government price reporting laws, changed by the Health Care Reform Act to, among other things, increase the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program and offer such rebates to additional populations, that require us to calculate and report complex pricing metrics to government programs, where such reported prices may be used in the calculation of reimbursement or discounts on our marketed drugs (participation in these programs and compliance with the applicable requirements may subject us to potentially significant discounts on our products, increased infrastructure costs, and potentially limit our ability to offer certain marketplace discounts);
- the Foreign Corrupt Practices Act, a United States law which regulates certain financial relationships with foreign government officials (which could include, for example, certain medical professionals); and
- state law equivalents of each of the above federal laws, such as anti-kickback, false claims, consumer protection and unfair competition laws which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements as well as submitting claims involving health care items or services reimbursed by any third-party payor, including commercial insurers; state laws that require biotech companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government that otherwise restricts payments that may be made to health care providers; state laws that require drug manufacturers to file reports with states regarding marketing information, such as the tracking and reporting of gifts, compensation and other remuneration and items of value provided to health care professionals and entities (compliance with such requirements may require investment in infrastructure to ensure that tracking is performed properly, and some of these laws result in the public disclosure of various types of payments and relationships, which could potentially have a negative effect on our business or increase enforcement scrutiny of our activities); and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways, with differing effects.

In addition, the regulatory approval and commercialization of any of our product candidates outside the United States will also likely subject us to foreign equivalents of the health care laws mentioned above, among other foreign laws.

The Health Care Reform Act, among other things, amended the intent standard of the federal Anti-Kickback Statute and criminal health care fraud statutes to a stricter standard such that a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the Health Care Reform Act codified case law that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act.

Efforts to ensure that our business arrangements will comply with applicable health care laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other health care laws and regulations. If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other federal health care programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with FDA regulations, to provide accurate information to the FDA, to comply with manufacturing standards we have established, to comply with federal and state health care fraud and abuse laws and regulations, to report financial information or data accurately or to disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the health care industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical studies, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other federal health care programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

If product liability lawsuits are brought against us, we may incur substantial liabilities and may be required to limit commercialization of our ADC product candidates.

We face an inherent risk of product liability as a result of the clinical testing of our ADC product candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if any product we develop allegedly causes injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our ADC product candidates. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- injury to our reputation;
- decreased demand for our product candidates or products that we may develop;
- withdrawal of clinical study participants;
- costs to defend the related litigations;
- a diversion of management's time and our resources;
- substantial monetary awards to study participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- the inability to commercialize our ADC product candidates; and
- a decline in our stock price.

Failure to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop. We currently carry product liability insurance covering our clinical studies in the amount of $10 million in the aggregate. Although we maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We will have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. If we are unable to obtain or maintain sufficient insurance coverage at an acceptable cost or to otherwise protect against potential product liability claims, it could prevent or inhibit the development and commercial production and sale of our product candidates, which could adversely affect our business, financial condition, results of operations and prospects.

We and our third-party contract manufacturers must comply with environmental, health and safety laws and regulations, and failure to comply with these laws and regulations could expose us to significant costs or liabilities.

We and our third-party manufacturers are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the use, generation, manufacture, distribution, storage, handling, treatment, remediation and disposal of hazardous materials and wastes. Hazardous chemicals, including flammable and biological materials, are involved in certain aspects of our business, and we cannot eliminate the risk of injury or contamination from the use, generation, manufacture, distribution, storage, handling, treatment or disposal of hazardous materials and wastes. In the event of contamination or injury, or failure to comply with environmental, health and safety laws and regulations, we could be held liable for any resulting damages and any such liability could exceed our assets and resources. We could also incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations. We are uninsured for third-party injury from contamination.

Environmental, health and safety laws and regulations are becoming increasingly more stringent. We may incur substantial costs in order 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. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Further, with respect to the operations of our third-party contract manufacturers, it is possible that if they fail to operate in compliance with applicable environmental, health and safety laws and regulations or properly dispose of wastes associated with our products, we could be held liable for any resulting damages, suffer reputational harm or experience a disruption in the manufacture and supply of our product candidates or products.

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

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

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

Despite the implementation of security measures, our internal computer systems and those of our third-party CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our or our CROs' operations, it could result in a material disruption of our programs. For example, the loss of clinical study data for our product candidates could

result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our product candidates could be delayed.

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

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. For example, the global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, such as the global financial crisis, could result in a variety of risks to our business, including, weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

Risks related to our common stock and this offering

We are eligible to be treated as an "emerging growth company," as defined in the JOBS Act, and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an emerging growth company, as defined in the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including, but not limited to, (1) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, (2) reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and (3) exemptions from the requirements of holding a non-binding advisory vote on executive compensation. In addition, as an emerging growth company, we are only required to provide two years of audited financial statements and two years of selected financial data in this prospectus.

We could be an emerging growth company for up to five years, although circumstances could cause us to lose that status earlier, including if the market value of our common stock held by non-affiliates exceeds $700.0 million as of any June 30 before that time or if we have total annual gross revenue of $1.07 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31 or, if we issue more than $1.07 billion in non-convertible debt during any three-year period before that time, we would cease to be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company" which would allow us to take advantage of many of the same exemptions from disclosure requirements, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile. When these exemptions cease to apply, we expect to incur

additional expenses and devote increased management effort toward ensuring compliance with them, and we cannot predict or estimate the amount or timing of such additional costs.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have irrevocably elected not to avail ourselves of this exemption from new or revised accounting standards and, therefore, will be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We do not know whether a market will develop for our common stock or what the market price of our common stock will be and, as a result, it may be difficult for you to sell your shares of our common stock.

Before this offering, there was no public trading market for our common stock. If a market for our common stock does not develop or is not sustained, it may be difficult for you to sell your shares of common stock at an attractive price, or at all. Further, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may be below the expectations of public market analysts and investors and, as a result of these and other factors, the price of our common stock may fall.

The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the initial public offering price.

The initial public offering price for our shares will be determined by negotiations between us and the representatives of the underwriters and may not be indicative of prices that will prevail in the trading market. The market price of shares of our common stock could be subject to wide fluctuations in response to many risk factors listed in this ‘‘Risk factors’’ section, and others beyond our control, including:

- results and timing of preclinical studies and clinical studies of our ADC product candidates, including XMT-1522 and XMT-1536;
- results of clinical studies of our competitors’ products;
- failure to adequately protect our trade secrets;
- our inability to raise additional capital and the terms on which we raise it;
- commencement or termination of any strategic partnership or licensing arrangement;
- regulatory developments, including actions with respect to our products or our competitors’ products;
- actual or anticipated fluctuations in our financial condition and operating results;
- publication of research reports by securities analysts about us or our competitors or our industry;
- our failure or the failure of our competitors to meet analysts’ projections or guidance that we or our competitors may give to the market;
- additions and departures of key personnel;

- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;
- the passage of legislation or other regulatory developments affecting us or our industry;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- sales of our common stock by us, our insiders or our other stockholders;
- speculation in the press or investment community;
- announcement or expectation of additional financing efforts;
- changes in market conditions for biopharmaceutical stocks; and
- changes in general market and economic conditions.

In addition, the stock market has recently experienced significant volatility, particularly with respect to pharmaceutical, biotechnology and other life sciences company stocks. The volatility of pharmaceutical, biotechnology and other life sciences company stocks often does not relate to the operating performance of the companies represented by the stock. As a result of this volatility, you may not be able to sell your common stock at or above the initial public offering price. As we operate in a single industry, we are especially vulnerable to these factors to the extent that they affect our industry or our products, or to a lesser extent our markets. In the past, securities class action litigation has often been initiated against companies following periods of volatility in their stock price. This type of litigation could result in substantial costs and divert our management's attention and resources, and could also require us to make substantial payments to satisfy judgments or to settle litigation.

Our principal stockholders and management own a significant percentage of our stock and, after this offering, will be able to exercise significant influence over matters subject to stockholder approval.

As of May 31, 2017, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock before this offering, together with their respective affiliates, beneficially owned approximately 94.6% of our common stock, including shares subject to outstanding options and warrants that are exercisable within 60 days after such date. We expect that upon completion of this offering, our executive officers and directors, combined with our stockholders who owned more than 5% of our outstanding common stock before this offering, together with their respective affiliates, will still continue to beneficially hold at least 74.9% of our outstanding common stock. Accordingly, even after this offering, these stockholders will be able to exert a significant degree of influence over our management and affairs and over matters requiring stockholder approval, including the election of our board of directors and approval of significant corporate transactions. This concentration of ownership could have the effect of entrenching our management or board of directors, delaying or preventing a change in our control or otherwise discouraging a potential acquirer from attempting to obtain control of us, which in turn could have a material and adverse effect on the fair market value of our common stock.

A significant portion of our total outstanding shares may be sold into the public market in the near future, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time after the expiration of the lock-up agreements described in the "Underwriting" section of this prospectus. These sales, or the market perception that the holders of a large number of shares intend to sell shares,

could reduce the market price of our common stock. After this offering, we will have 22,645,621 shares of common stock outstanding. This includes the 5,000,000 shares that we are selling in this offering, which may be resold in the public market immediately. Of the remaining 17,645,621 shares, 17,638,212 will be able to be sold 180 days after the date of this prospectus, due to lock-up agreements between the holders of these shares and the underwriters. However, J. P. Morgan Securities LLC, Cowen and Company, LLC and Leerink Partners LLC, on behalf of the underwriters, can waive the provisions of these lock-up agreements by prior written consent and allow these stockholders to sell their shares at any time.

In addition, as of May 31, 2017, there were 3,141,625 shares subject to outstanding options that will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements, the lock-up agreements and Rules 144 and 701 under the Securities Act. Moreover, after this offering, holders of an aggregate of 17,580,601 shares of our common stock will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. If such holders, by exercising their registration rights, cause a large number of securities to be registered and sold into the public market, these sales could have an adverse effect on the market price for our common stock. We also intend to register all shares of common stock that we may issue under our employee benefit plans, including our 2017 Stock Plan. Once we register these shares and they are issued in accordance with the terms of the plans, they can be freely sold in the public market upon issuance, subject to the lock-up agreements and the restrictions imposed on our affiliates under Rule 144. For more information, see "Shares eligible for future sale—Rule 144."

You will incur immediate and substantial dilution as a result of this offering.

If you purchase common stock in this offering, assuming a public offering price of $15.00 per share, the midpoint of the range set forth on the cover page of this prospectus, you will incur immediate and substantial dilution of $10.62 per share, representing the difference between the assumed initial public offering price of $15.00 per share and our pro forma as adjusted net tangible book value per share after giving effect to this offering. Moreover, we issued warrants and options in the past to acquire common stock at prices significantly below the assumed initial public offering price. As of March 31, 2017, there were 3,412,340 shares subject to outstanding warrants and options. To the extent that these outstanding warrants and options are ultimately exercised, you will incur further dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. For more information on the dilution you may suffer as a result of investing in this offering, see "Dilution."

We have broad discretion in the use of net proceeds from this offering and may not use them effectively, which could adversely affect our results of operations and cause our stock price to decline.

We currently intend to use the net proceeds from this offering to fund the continued development of XMT-1522 and XMT-1536, including our Phase 1 clinical studies for XMT-1522 and XMT-1536, and to fund new and ongoing research activities including for our ADC platforms, as described in "Use of proceeds." Any remaining amounts will be used for working capital and general corporate purposes, including funding the costs of operating as a public company, capital expenditures and the hiring of additional personnel. Although we currently intend to use the net proceeds from this offering in such a manner, we will have broad discretion in the application of the net proceeds. We may use the net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. Our failure to apply these funds effectively could adversely affect our ability to continue to develop and commercialize our ADC product candidates and harm our business.

We will incur increased costs as a result of being a public company, and our management will be required to devote substantial time to public company compliance programs.

To comply with the requirements imposed on us as a public company, we will incur significant legal, insurance, accounting and other expenses that we did not incur as a private company. In addition, our administrative staff will be required to perform additional tasks. For example, in anticipation of becoming a public company, we will need to adopt additional internal controls and disclosure controls and procedures, retain a transfer agent, adopt an insider trading policy and bear all of the internal and external costs of preparing and distributing periodic public reports in compliance with our obligations under the securities laws. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment will result in increased general and administrative expenses and may divert management's time and attention from product development activities. These laws, regulations and standards are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters, enforcement proceeding and higher costs necessitated by ongoing revisions to disclosure and governing practices. In connection with this offering, we are increasing our directors' and officers' insurance coverage, which will increase our insurance cost. In the future, it will be more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

In addition, in order to comply with the requirements of being a public company, we may need to undertake various actions, including implementing new internal controls and procedures and hiring new accounting or internal audit staff. The Sarbanes-Oxley Act requires that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that information required to be disclosed in reports under the Securities Exchange Act of 1934 as amended, or the Exchange Act, is accumulated and communicated to our principal executive and financial officers. Any failure to develop or maintain effective controls could adversely affect the results of periodic management evaluations. In the event that we are not able to demonstrate compliance with the Sarbanes-Oxley Act, that our internal control over financial reporting is perceived as inadequate, or that we are unable to produce timely or accurate financial statements, investors may lose confidence in our operating results and the price of our ordinary shares could decline. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on The NASDAQ Global Market.

We are not currently required to comply with the SEC's rules that implement Section 404 of the Sarbanes-Oxley Act, and are therefore not yet required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. Upon becoming a public company, we will be required to comply with certain of these rules, which will require management to certify financial and other information in our quarterly and annual reports and provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second annual report. This assessment will need to include the disclosure of any material weaknesses in our internal control over financial reporting identified by our management or our independent registered public accounting firm. We are just beginning the costly and challenging process of implementing the system and processing

documentation needed to comply with such requirements. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion.

Our independent registered public accounting firm will not be required to formally attest to the effectiveness of our internal control over financial reporting until, at earliest, the later of our second annual report or the first annual report required to be filed with the SEC following the date we are no longer an ''emerging growth company'' as defined in the JOBS Act. We cannot assure you that there will not be material weaknesses or significant deficiencies in our internal controls in the future.

We do not expect to pay any cash dividends for the foreseeable future.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any cash dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our operations. In addition, any future debt financing arrangement may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. Securities and industry analysts do not currently, and may never, publish research on our company. If no securities or industry analysts commence coverage of our company, the trading price for our stock would likely be negatively impacted. In the event securities or industry analysts initiate coverage, if one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. In addition, if our operating results fail to meet the forecast of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

Provisions in our amended and restated certificate of incorporation, our amended and restated by-laws and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation, amended and restated by-laws and Delaware law contain provisions that may have the effect of discouraging, delaying or preventing a change in control of us or changes in our management that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. Our amended and restated certificate of incorporation and by-laws, which will become effective upon the closing of this offering, include provisions that:

- authorize ''blank check'' preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors;

- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- provide that our directors may be removed only for cause;
- specify that no stockholder is permitted to cumulate votes at any election of directors;
- expressly authorized our board of directors to modify, alter or repeal our amended and restated by-laws; and
- require supermajority votes of the holders of our common stock to amend specified provisions of our amended and restated certificate of incorporation and amended and restated by-laws.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management. 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, because we are incorporated in the State of Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, or the DGCL, 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.

Any provision of our amended and restated certificate of incorporation, amended and restated by-laws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our ability to use net operating losses and certain tax credit carryforwards may be subject to certain limitations.

Under Section 382 of the Internal Revenue Code of 1986 as amended, or the Code, a corporation that undergoes an ‘‘ownership change’’ is subject to limitations on its ability to utilize its net operating losses, or NOLs, or other tax attributes (including certain tax credits) to offset future taxable income or reduce tax. In general, an ownership change, as defined by Section 382 of the Code, results from transactions increasing the ownership of certain stockholders in the stock of a corporation by more than 50% over a three-year period. We have determined that, as a result of certain issuances of stock through December 31, 2015, we have experienced such ownership changes. Depending on the timing of any future utilization of our carryforwards, we may be limited as to the amount that can be utilized each year as a result of previous ownership changes. In addition, future changes in our stock ownership, including from this or future offerings, as well as other changes that may be outside of our control, could result in additional ownership changes under Section 382 of the Code. Our NOLs and other tax attributes may also be impaired under similar provisions of state law. Furthermore, our ability to utilize our NOLs and other tax attributes is conditioned upon our attaining profitability and generating U.S. federal and state taxable income. As described above under ‘‘—Risks related to our financial position and need for additional capital,’’ we have

incurred net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future; thus, we do not know whether or when we will generate the U.S. federal and state taxable income necessary to utilize our NOLs and other tax attributes. We have recorded a full valuation allowance related to our NOLs and other deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets.

Our amended and restated certificate of incorporation designates the state or federal courts within the State of Delaware as the exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that, subject to limited exceptions, the state or federal courts within the State of Delaware will be exclusive forums for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (3) any action asserting a claim against us arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated by-laws or (4) any other action asserting a claim against us that is governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our amended and restated certificate of incorporation described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

Cautionary note regarding forward-looking statements

This prospectus contains forward-looking statements. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, our clinical results and other future conditions. The words ‘‘anticipate,’’ ‘‘believe,’’ ‘‘estimate,’’ ‘‘expect,’’ ‘‘forecast,’’ ‘‘goal,’’ ‘‘intend,’’ ‘‘may,’’ ‘‘plan,’’ ‘‘predict,’’ ‘‘project,’’ ‘‘target,’’ ‘‘potential,’’ ‘‘will,’’ ‘‘would,’’ ‘‘could,’’ ‘‘should,’’ ‘‘continue,’’ ‘‘contemplate’’ or the negative of these terms or other 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 prospectus include, among other things, statements about:

- the initiation, cost, timing, progress and results of our current and future research and development activities, preclinical studies and clinical trials;
- the potential benefits of strategic partnership agreements and our ability to enter into selective strategic partnership arrangements;
- the timing of, and our ability to obtain and maintain, regulatory approvals for our product candidates;
- our ability to quickly and efficiently identify and develop additional product candidates;
- our ability to advance any product candidate into, and successfully complete clinical trials;
- our intellectual property position, including with respect to our trade secrets;
- our use of the proceeds from this offering; and
- our estimates regarding expenses, future revenues, capital requirements, the sufficiency of our current and expected cash resources and our need 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 prospectus, particularly in the ‘‘Risk factors’’ section, that we believe 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 or investments we may make.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, although we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

Use of proceeds

We estimate that we will receive net proceeds of approximately $67.5 million from the sale of the shares of common stock offered in this offering, or approximately $78.0 million if the underwriters exercise their option to purchase additional shares in full, based on an assumed initial public offering price of $15.00 per share (the midpoint of the range set forth on the cover of this prospectus), after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase (decrease) in the assumed initial public offering price of $15.00 per share would increase (decrease) our net proceeds by $4.7 million, assuming the number of shares offered by us, as set forth on the cover of this prospectus, remains the same and after deducting the underwriting discount and estimated offering expenses payable by us. We may also increase or decrease the number of shares we are offering. An increase (decrease) of 1,000,000 in the number of shares we are offering would increase (decrease) the net proceeds to us from this offering, after deducting the underwriting discount and estimated offering expenses payable by us, by approximately $14.0 million, assuming the assumed initial public offering price stays the same.

The principal purposes of this offering are to increase our financial flexibility, create a public market for our common stock and to facilitate our access to the public equity markets. We currently expect to use the net proceeds from this offering as follows:

- approximately $37.5 million for our Phase 1 clinical trial and ongoing development of XMT-1522, including clinical research outsourcing, drug manufacturing, companion diagnostic development and internal personnel costs;
- approximately $19.0 million for our preclinical activities and Phase 1 clinical trial of XMT-1536, including clinical research outsourcing, drug manufacturing, companion diagnostic development and internal personnel costs; and
- approximately $6.0 million for new and ongoing research activities, including for our platform, with the goal of filing one IND every 12 to 24 months.

We expect to use the remainder of the net proceeds from this offering, if any, for working capital and other general corporate purposes, which may include funding for the hiring of additional personnel, capital expenditures and the costs of operating as a public company.

We believe the net proceeds from this offering, together with our existing cash and cash equivalents, will be sufficient to fund our Phase 1 clinical trials of XMT-1522 and of XMT-1536. Although it is difficult to predict future liquidity requirements, based on our current plans, we believe our cash and cash equivalents, together with the net proceeds to us from this offering, will be sufficient to fund our operating plan for the next 24 months.

Although we currently anticipate that we will use the net proceeds from this offering as described above, there may be circumstances where a reallocation of funds is necessary. The amounts and timing of our actual expenditures will depend upon numerous factors, including the status of and results from our clinical trials and other studies, the progress of our preclinical development efforts, our operating costs and the other factors described under ‘‘Risk factors’’ in this prospectus. Accordingly, our management will have flexibility in applying the net proceeds from this offering. An investor will not have the opportunity to evaluate the economic, financial or other information on which we base our decisions on how to use the proceeds.

Although we may use a portion of the net proceeds of this offering for the acquisition or licensing, as the case may be, of additional technologies, other assets or businesses, or for other strategic investments or opportunities, we have no current understandings, agreements or commitments to do so.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities.

Dividend policy

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay dividends will be made at the discretion of our board of directors and will depend on various factors, including applicable laws, our results of operations, financial condition, future prospects and any other factors deemed relevant by our board of directors.

Capitalization

The following table sets forth our cash and cash equivalents and capitalization as of March 31, 2017:

- on an actual basis;
- on a pro forma basis to reflect the conversion of all outstanding shares of our convertible preferred stock into an aggregate of 16,154,671 shares of common stock and the adoption of our amended and restated certificate of incorporation, which will occur immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to additionally reflect the issuance and sale by us of 5,000,000 shares of our common stock in this offering, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, at an assumed initial public offering price of $15.00 per share (the midpoint of the range set forth on the cover of this prospectus).

Our capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of the offering determined at pricing. You should read this information together with our audited financial statements and related notes appearing elsewhere in this prospectus and the information set forth under the headings ''Selected financial data'' and ''Management's discussion and analysis of financial condition and results of operations.''

	As of March 31, 2017		
(in thousands, except share and per share data)	Actual	Pro forma	Pro forma as adjusted
Cash and cash equivalents	$ 88,515	$ 88,515	$156,520
Series A-1 convertible preferred stock, $0.0001 par value: 25,085,153 shares authorized, issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	26,336	–	–
Series B-1 convertible preferred stock, $0.0001 par value: 32,936,919 shares authorized, issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	35,232	–	–
Series C-1 convertible preferred stock, $0.0001 par value: 14,674,062 shares authorized, issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	32,882	–	–
Stockholders' (deficit) equity:			
Common stock, $0.0001 par value; 96,500,000 shares authorized, actual; 1,356,211 shares issued and outstanding, actual; 175,000,000 shares authorized, pro forma; 17,510,882 shares issued and outstanding, pro forma; 175,000,000 shares authorized, pro forma as adjusted; 22,510,882 shares issued and shares outstanding, pro forma as adjusted;	1	3	4
Additional paid-in capital	3,919	98,367	165,866
Accumulated deficit	(67,232)	(67,232)	(67,232)
Total stockholders' (deficit) equity	(63,312)	31,138	98,638
Total capitalization	$ 31,138	$ 31,138	$98,638

(1) A $1.00 increase (decrease) in the assumed initial public offering price of $15.00 per share, the midpoint of the range set forth on the cover page of this prospectus, would increase (decrease) the pro forma as adjusted amount of each of Cash and cash equivalents, Additional paid-in capital, Total stockholders' (deficit) equity and Total capitalization by approximately $4.7 million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. A 1,000,000 share increase (decrease) in the number of shares offered by us

would increase (decrease) the as adjusted amount of each of Cash and cash equivalents, Additional paid-in capital, Total stockholders' (deficit) equity and Total capitalization by approximately $14.0 million after deducting underwriting discounts and commissions and any estimated offering expenses payable by us.

The number of shares of common stock to be outstanding after this offering is based on 17,510,882 shares of common stock outstanding as of March 31, 2017 and excludes the following:

- 3,282,849 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2017 having a weighted-average exercise price of $2.85 per share;
- 129,491 shares of common stock issuable upon the exercise of outstanding warrants as of March 31, 2017 having an exercise price of $0.05 per share;
- 2,255,000 shares of common stock reserved for future issuance under our 2017 Stock Plan; and
- 225,000 shares of common stock reserved for future issuance under our 2017 ESPP, which will become effective upon the completion of this offering.

Dilution

If you invest in our common stock, your interest will be diluted to the extent of the difference between the initial public offering price per share of our common stock in this offering and the pro forma as adjusted net tangible book value per share of our common stock after this offering.

As of March 31, 2017 we had a historical net tangible book value of $(64.9) million, or $(47.85) per share of common stock. Historical net tangible book value per share is equal to our total tangible assets, excluding deferred costs, less total liabilities, including convertible preferred stock, divided by the number of outstanding shares of our common stock. Our pro forma net tangible book value as of March 31, 2017 was $29.5 million, or $1.69 per share of our common stock. Pro forma net tangible book value represents the amount of our total tangible assets less our total liabilities, after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock into shares of common stock upon the completion of this offering. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares issued as of March 31, 2017, after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 16,154,671 shares of our common stock upon the completion of this offering. After giving further effect to the sale of 5,000,000 shares of common stock in this offering, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, at an assumed initial public offering price of $15.00 per share (the midpoint of the range set forth on the cover of this prospectus), our pro forma as adjusted net tangible book value as of March 31, 2017 would have been approximately $98.6 million, or approximately $4.38 per share of common stock. This represents an immediate increase in pro forma as adjusted net tangible book value of $2.69 per share to our existing stockholders and an immediate dilution of $10.62 per share to investors participating in this offering.

The following table illustrates this per share dilution:

Assumed initial public offering price per share		$15.00
Historical net tangible book value per share as of March 31, 2017	$(47.85)	
Increase attributable to pro forma adjustments	49.54	
Pro forma net tangible book value per share as of March 31, 2017	1.69	
Increase in net tangible book value per share attributable to new investors	2.69	
Pro forma net tangible book value per share after this offering	4.38	
Dilution per share to new investors		$10.62

Each $1.00 increase (decrease) in the assumed initial public offering price of $15.00 per share would increase (decrease) our pro forma net tangible book value as adjusted by approximately $4.7 million, or by approximately $0.21 per share and the dilution to investors purchasing shares in this offering by approximately $0.79 per share, assuming the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares in full, pro forma as adjusted net tangible book value as of March 31, 2017 will increase to $109.1 million, or $4.69 per share, representing an increase to existing stockholders of $3.00 per share, and there will be an immediate dilution of $10.31 per share to new investors.

The following table summarizes, on a pro forma as adjusted basis as of March 31, 2017, the differences between the number of shares of common stock purchased from us, the total consideration and the average price per share paid by existing stockholders (giving effect to the conversion of all of our convertible preferred stock into 16,154,671 shares of common stock prior to the completion of this offering) and by investors participating in this offering, before deducting the underwriting discounts and commissions and estimated offering expenses, at an assumed initial public offering price of $15.00 per share (the midpoint of the range set forth on the cover of this prospectus).

	Shares purchased		Total consideration		Average price / share
	Number	Percent	Amount	Percent	
Existing stockholders	17,510,882	78%	$150,493,000	67%	$8.59
New investors	5,000,000	22%	75,000,000	33%	$15.00
Total	22,510,882	100%	$225,493,000	100%	

The number of shares of common stock to be outstanding after this offering is based on 17,510,882 shares of common stock outstanding as of March 31, 2017 excludes the following:

- 3,282,849 shares of common stock issuable upon the exercise of outstanding stock options as of March 31, 2017 having a weighted-average exercise price of $2.85 per share;
- 129,491 shares of common stock issuable upon the exercise of outstanding warrants as of March 31, 2017 having an exercise price of $0.05 per share;
- 2,255,000 shares of common stock reserved for future issuance under our 2017 Stock Plan; and
- 225,000 shares of common stock reserved for future issuance under our 2017 ESPP, which will become effective upon the completion of this offering.

Furthermore, we may choose to raise additional capital through the sale of equity or convertible debt securities due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. New investors will experience further dilution if any of our outstanding options or warrants are exercised, new options are issued and exercised under our equity incentive plans or we issue additional shares of common stock, other equity securities or convertible debt securities in the future. See ‘‘Risk factors—You will incur immediate and substantial dilution as a result of this offering.’’

Certain of our existing stockholders, New Enterprise Associates, Pfizer Inc. and Takeda Pharmaceutical Company Limited, have indicated an interest in purchasing, in aggregate, up to approximately $30 million in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters could determine to sell more, fewer or no shares to any of these potential investors, and any of these potential investors could determine to purchase more, fewer or no shares in this offering. The foregoing discussion and tables do not reflect any potential purchases by these existing stockholders.

Selected financial data

You should read the following selected financial data together with our financial statements and the related notes appearing elsewhere in this prospectus and the information under the heading ''Management's discussion and analysis of financial condition and results of operations.'' We have derived the statement of operations data for the years ended December 31, 2015 and 2016 and the balance sheet data as of December 31, 2015 and 2016 from our audited financial statements included elsewhere in this prospectus. We have derived the statement of operations data for the three months ended March 31, 2016 and 2017 and the balance sheet data as of March 31, 2017 from our unaudited financial statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that should be expected in the future and the results for the three months ended March 31, 2017 are not necessarily indicative of the results for the full year or any other period.

	Year ended December 31,		Three months ended March 31,	
	2015	2016	2016	2017
	(in thousands, except per share data)			
Statements of Operations Data:				
Collaboration revenue	$ 10,359	$ 25,171	$ 3,697	$ 4,290
Operating expenses:				
Research and development	21,353	32,008	7,436	10,106
General and administrative	5,347	6,984	1,621	2,296
Total operating expenses	26,700	38,992	9,057	12,402
Other income (expense):				
Other income (expense), net	(87)	121	4	51
Total other income (expense)	(87)	121	4	51
Net loss	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Net loss attributable to common stockholders	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Net loss per share applicable to common stockholders—basic and diluted(1)	$ (13.43)	$ (10.82)	$ (4.31)	$ (6.02)
Weighted-average number of common shares used in net loss per share attributable to common stockholders—basic and diluted(1)	1,223,457	1,266,758	1,242,993	1,338,475
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited)		$ (1.01)		$ (0.46)
Pro forma weighted average number of common shares used in net loss per share attributable to common stockholders—basic and diluted (unaudited)		13,585,523		17,493,146

	As of December 31,		As of March 31,
	2015	2016	2017
	(in thousands)		
Balance Sheet Data:			
Cash and cash equivalents	$ 11,534	$100,297	$ 88,515
Working capital(2)	2,019	73,787	57,662
Total assets	14,409	105,087	95,007
Convertible preferred stock	36,296	94,450	94,450
Total stockholders' deficit	(42,692)	(55,619)	(63,312)

(1) See Note 2 to the notes to our financial statements appearing elsewhere in this prospectus for further details on the calculation of basic and diluted net loss per share and pro forma basic and diluted net loss per share applicable to common stockholders.

(2) We define working capital as current assets less current liabilities.

Management's discussion and analysis of financial condition and results of operations

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and related notes appearing in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk factors" section of this prospectus, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical stage biopharmaceutical company focused on developing antibody drug conjugates, or ADCs, that offer a clinically meaningful benefit for cancer patients with significant unmet need. We have leveraged 20 years of industry learning in the ADC field to develop proprietary technologies that enable us to design ADCs to have improved efficacy, safety and tolerability relative to existing ADC therapies. Our most advanced platform, Dolaflexin, has been used to generate a pipeline of proprietary ADC product candidates to address patient populations that are not currently amenable to treatment with traditional ADC-based therapies. Our lead product candidate, XMT-1522, is a HER2-targeted ADC currently in a Phase 1 dose escalation study in breast cancer patients, with interim safety results expected by the end of 2017. Upon the completion of dose escalation, we plan to expand clinical development of XMT-1522 into additional breast cancer, non-small cell lung cancer, or NSCLC, and gastric cancer patient populations, all of which are not addressed by existing HER2 therapies. Our second product candidate, XMT-1536, is an ADC targeting NaPi2b, an antigen broadly expressed in ovarian cancer and NSCLC. We expect XMT-1536 to enter clinical development in early 2018. Beyond our two lead product candidates, we continue to invest in our earlier stage product candidates and in our ADC technologies. In addition, we have established a strategic partnership with Takeda Pharmaceutical Company Limited, or Takeda, under which they obtained rights to XMT-1522 outside of the United States and Canada. We have also established strategic research and development partnerships with Takeda and Merck KGaA for the development and commercialization of additional ADC product candidates against a limited number of targets selected by our partners based on our Dolaflexin platform. We believe the potential of our ADC technologies, supported by our world-class management team and protected by our robust intellectual property portfolio, will allow us to develop targeted and highly tailored therapies to help cancer patients become cancer survivors.

Since inception, our operations have focused on building our platform, identifying potential product candidates, producing drug substance and drug product material for use in pre-clinical studies, conducting pre-clinical studies, including Good Laboratory Practice, or GLP, toxicology studies, manufacturing clinical trial material and commencing clinical trials, establishing and protecting our intellectual property, staffing our company and raising capital. We do not have any products approved for sale and have not generated any revenue from product sales. We have funded our operations primarily through our strategic partnerships and private placements of our convertible preferred stock. From July 2012 through March 31, 2017, we have raised an aggregate of $195.2 million of gross proceeds to fund our operations, of which $95.5 million was from the issuance of convertible preferred stock and $99.7 million was received in payments from our strategic partnerships.

Since inception, we have incurred significant operating losses. Our net losses were $16.4 million, $13.7 million, $5.4 million and $8.1 million for the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, respectively. As of March 31, 2017, we had an accumulated deficit of $67.2 million. We expect to continue to incur significant expenses and operating losses over the next several years. We anticipate that our expenses will increase significantly in connection with our ongoing activities, as we:

- continue clinical development of our lead product candidate XMT-1522;
- continue IND-enabling activities and commence the planned clinical development activities for our second product candidate XMT-1536;
- continue activities to discover, validate and develop additional product candidates;
- maintain, expand and protect our intellectual property portfolio;
- hire additional research, development and general and administrative personnel; and
- incur additional costs associated with operating as a public company upon the closing of this offering.

Financial operations overview

Revenue

To date, all of our revenue has been generated from strategic partnerships. As of March 31, 2017, we have received $99.7 million in payments from our strategic partnerships with Takeda and Merck KGaA and recognized $42.1 million in revenue. We have not generated any revenue from product sales, and we do not expect to generate any revenue from product sales for the foreseeable future.

In March 2014, we entered into a collaboration agreement with Takeda for the development and commercialization of ADC product candidates utilizing Fleximer. Under this agreement, as amended, Takeda may select up to seven target antigens and has selected four target antigens to date. Takeda is responsible for generating antibodies against the target antigens and we are responsible for generating Fleximer and our proprietary payloads and conjugating this to the antibody to create the ADC product candidates. Takeda then has the exclusive right to and is responsible for the further development, manufacture and commercialization of these ADC product candidates, except that we have an option to co-develop and co-commercialize one product targeting one of Takeda's third through seventh target antigens and may exercise such option with respect to an applicable product no later than 30 days after initiation of a Phase 2 clinical study for such product or at an earlier time if Takeda intends to grant rights to such product to a third party.

In addition, in January 2016, we entered into a collaboration agreement with Takeda for the development and commercialization of XMT-1522. Under this agreement, Takeda is granted the exclusive right and responsibility to commercialize XMT-1522 outside the United States and Canada.

For the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, we recognized revenue of $5.5 million, $21.4 million, $3.0 million and $3.5 million, respectively, related to the Takeda agreements.

In June 2014, we entered into a collaboration agreement with Merck KGaA for the development and commercialization of ADC product candidates utilizing Fleximer for up to six target antigens. Merck KGaA is responsible for generating antibodies against the target antigens and we are responsible for generating

Fleximer and our proprietary payloads and conjugating this to the antibody to create the ADC product candidates. Merck KGaA then has the exclusive right to and is responsible for the further development and commercialization of these ADC product candidates.

For the years ended December 31, 2015 and 2016 and for the three months ended March 31, 2016 and 2017, we recognized revenue of $4.6 million, $3.6 million, $0.7 million and $0.7 million, respectively, related to the Merck KGaA agreement.

For the foreseeable future, we expect substantially all of our revenue to be generated from our collaboration agreements with Takeda and Merck KGaA and any other collaboration agreements we may enter into. Given the schedule of potential milestone payments and the uncertain nature and timing of clinical development, we cannot predict when or whether we will receive further milestone payments or any royalty payments under these collaborations.

For information about revenue recognition policy, see ''Critical accounting policies and estimates—Revenue recognition.''

Operating expenses

Research and development expenses

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

- employee-related expenses, including salaries, benefits, and stock-based compensation expense;
- costs of funding research and development performed by third parties that conduct research, preclinical activities, manufacturing and clinical trials on our behalf;
- laboratory supplies;
- facility costs, including rent, depreciation and maintenance expenses; and
- upfront and milestone payments under our third-party licensing agreements.

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

We expect research and development costs to increase significantly for the foreseeable future as our product candidate development programs progress. There are numerous factors associated with the successful development and commercialization of any of our product candidates, including future trial design and various regulatory requirements, many of which cannot be determined with accuracy at our current stage of development. Additionally, future commercial and regulatory factors beyond our control may impact our clinical development programs and plans.

A significant portion of our research and development costs have been external costs, which we track on a program-by-program basis following nomination as a product candidate. Our internal research and development costs are primarily personnel-related costs, facility costs, including depreciation and lab consumables. We have not historically tracked all of our internal research and development expenses on a

program-by-program basis as they are deployed across multiple projects under development. The following table summarizes our external research and development expenses, by program following nomination as a development candidate, for the years ended December 31, 2015 and 2016 and for the three months ended March 31, 2016 and 2017. Pre-development candidate expenses, unallocated costs and internal research and development costs have been stated separately.

	Year ended December 31,		Three months ended March 31,	
(in thousands)	2015	2016	2016	2017
XMT-1522 external costs	$ 8,893	$ 12,107	$ 3,489	$ 3,402
XMT-1536 external costs	1,946	3,971	603	1,443
External costs for discovery stage programs and platform development	1,357	1,439	312	507
Internal research and development costs	9,157	14,491	3,032	4,754
Total research and development costs	$21,353	$32,008	$ 7,436	$ 10,106

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

- successful completion of preclinical studies and IND-enabling studies;
- successful enrollment in and completion of clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- commercializing the product candidates, if and when approved, whether alone or in collaboration with others; and
- continued acceptable safety profile of the drugs following approval.

A change in the outcome of any of these variables with respect to the development, manufacture or commercialization of any of our product candidates would significantly change the costs, timing and viability associated with the development of that product candidate.

General and administrative expenses

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

We anticipate that our general and administrative expenses will increase in the future to support continued research and development activities. This will likely include increased costs related to the hiring of additional personnel, fees to outside consultants and patent costs, among other expenses. We also anticipate increased expenses associated with being a public company, including costs for audit, legal, regulatory and tax-related services, director and officer insurance premiums and investor relations costs.

Other income (expense)

Other income (expense) consists primarily of other expense related to a foreign exchange loss in 2015 and interest income earned on cash equivalents balances.

Critical accounting policies and estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make judgments and estimates that affect the reported amounts of assets, liabilities, revenues, and expenses and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. On an ongoing basis, we evaluate our judgments and estimates in light of changes in circumstances, facts and experience. The effects of material revisions in estimates, if any, will be reflected in the financial statements prospectively from the date of change in estimates.

While our significant accounting policies are described in more detail in the notes to our financial statements appearing elsewhere in this prospectus, we believe the following accounting policies used in the preparation of our financial statements require the most significant judgments and estimates.

Revenue recognition

We recognize revenue from collaboration arrangements in accordance with FASB ASC Topic 605, *Revenue Recognition, or* ASC 605. Accordingly, revenue is recognized when all of the following criteria are met:

- persuasive evidence of an arrangement exists;
- delivery has occurred or services have been rendered;
- the seller's price to the buyer is fixed or determinable; and
- collectibility is reasonably assured.

Amounts received prior to satisfying the revenue recognition criteria are recognized as deferred revenue in the consolidated balance sheets. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current liabilities. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as deferred revenue, net of current portion.

Multiple element arrangements

We analyze multiple element arrangements based on the guidance in FASB ASC Topic 605-25, *Revenue Recognition—Multiple Element Arrangements,* or ASC 605-25. Pursuant to the guidance in ASC 605-25, we evaluate multiple element arrangements to determine (i) the deliverables included in the arrangement and ii) whether the individual deliverables represent separate units of accounting or whether they must be

accounted for as a combined unit of accounting. This evaluation requires subjective determinations and requires management to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. Deliverables are considered separate units of accounting provided that: (i) the delivered item(s) has value to the customer on a stand-alone basis and (ii) the arrangement includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in our control. In assessing whether an item has stand-alone value, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. In addition, we consider whether the collaboration partner can use the deliverable(s) for their intended purpose without the receipt of the remaining element(s), whether the value of the deliverable is dependent on the undelivered item(s) and whether there are other vendors that can provide the undelivered element(s).

Options are considered substantive if, at the inception of the arrangement, we are at risk as to whether the collaboration partner will choose to exercise the option. Factors that we consider in evaluating whether an option is substantive include the cost to exercise the option, the overall objective of the arrangement, the benefit the collaborator might obtain from the arrangement without exercising the option and the likelihood the option will be exercised. When an option is considered substantive, we do not consider the option or item underlying the option to be a deliverable at the inception of the arrangement and the associated option fees are not included in the allocable consideration, assuming the option is not priced at a significant and incremental discount. Conversely, when an option is not considered substantive, we would consider the option including other deliverables contingent upon the exercise of the option, to be a deliverable at the inception of the arrangement and a corresponding amount would be included in the allocable arrangement consideration. Notwithstanding whether the option is considered substantive or non-substantive, if the price of the option includes a significant incremental discount, the discount would be included as a deliverable at the inception of the arrangement.

Allocation of arrangement consideration

Arrangement consideration that is fixed or determinable is allocated among the separate units of accounting using the relative selling price method. Then, the applicable revenue recognition criteria in ASC 605-25 are applied to each of the separate units of accounting in determining the appropriate period and pattern of recognition. We determine the selling price of a unit of accounting following the hierarchy of evidence prescribed by ASC 605-25. Accordingly, we determine the estimated selling price for units of accounting within each arrangement using vendor-specific objective evidence, or VSOE, of selling price, if available, third-party evidence, or TPE, of selling price if VSOE is not available, or best estimate of selling price, or BESP, if neither VSOE nor TPE is available. We typically use BESP to estimate the selling price, since it generally does not have VSOE or TPE of selling price for its units of accounting. Determining the BESP for a unit of accounting requires significant judgment. In developing the BESP for a unit of accounting, we consider applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. We validate the BESP for units of accounting by evaluating whether changes in the key assumptions used to determine the BESP will have a significant effect on the allocation of arrangement consideration between multiple units of accounting.

Pattern of recognition

We recognize arrangement consideration allocated to each unit of accounting when all of the revenue recognition criteria in ASC 605 are satisfied for that particular unit of accounting. Deliverables under

collaboration agreements generally consist of licenses and research and development services. License revenue is recognized when the license is delivered when it is determined to have stand-alone value from the undelivered elements of the arrangement. If the license does not have stand-alone value, the amounts allocated to the license option will be combined with the related undelivered items as a single unit of accounting. The revenue recognition of a combined unit of accounting typically follows the pattern of revenue of the last delivered item in the combined accounting unit.

We recognize the amounts associated with research and development services and other service related deliverables ratably over the associated period of performance. If there is no discernable pattern of performance or objectively measureable performance measures do not exist, then we recognize revenue under the arrangement on a straight line basis over the period we are expected to complete its performance obligations. Conversely, if the pattern of performance in which the service is provided to the customer can be determined and objectively measurable performance exists, then we recognize revenue under the arrangement using the proportional performance method.

We recognize revenue associated with license options upon exercise of the option, if the underlying license has standalone value from the other deliverables to be provided subsequent to delivery of the license. If the license does not have standalone value, the amounts allocated to the license option will be combined with the related undelivered items as a single unit of accounting.

Revenue recognized is limited to the lesser of the cumulative amount of payments received of the cumulative revenue earned determined using the straight line method or proportional performance, as applicable, as of the period end date.

Recognition of milestones and royalties

At the inception of each arrangement that includes milestone payments, we evaluate whether each milestone is substantive and at-risk. This evaluation includes an assessment of whether (a) the consideration is commensurate with either (1) the entity's performance to achieve the milestone, or (2) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting at least in part from the entity's performance to achieve the milestone; (b) the consideration relates solely to past performance; and (c) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. We evaluate factors such as the scientific, regulatory, commercial, and other risks that must be overcome to achieve the respective milestone, the level of effort and investment required to achieve the respective milestone, and whether the milestone consideration is reasonable relative to all deliverables and payment terms in the arrangement in making this assessment. On the milestone achievement date, assuming all other revenue recognition criteria are met and the milestone is deemed substantive and at-risk, we recognize the payment as collaboration revenue. For milestones that are not deemed substantive and at-risk, where payment is reasonably assured, we recognize a cumulative adjustment to revenue based on proportion of services performed prior to the milestone payment and the remaining amount of the payment over the remaining service period.

We will recognize royalty revenue, if any, in the period of sale of the related product(s), based on the underlying contract terms, provided that the reported sales are reliably measurable and we have no remaining performance obligations, assuming all other revenue recognition criteria are met.

Collaborative arrangements

We record the elements of our collaboration agreements that represent joint operating activities in accordance with ASC Topic 808, *Collaborative Arrangements, or* ASC 808. Accordingly, the elements of the

collaboration agreements that represent activities in which both parties are active participants and to which both parties are exposed to the significant risks and rewards that are dependent on the commercial success of the activities, are recorded as collaborative arrangements. We consider the guidance in ASC Topic 605-45, *Revenue Recognition—Principal Agent Considerations, or* ASC 605-45, in determining the appropriate treatment for the transactions between us and our collaborative partner and the transactions between us and third parties. Generally, the classification of transactions under the collaborative arrangements is determined based on the nature and contractual terms of the arrangement along with the nature of the operations of the participants. To the extent revenue is generated from a collaboration, we will recognize its share of the net sales on a gross basis if it is deemed to be the principal in the transactions with customers, or on a net basis if it is instead deemed to be the agent in the transactions with customers, consistent with the guidance in ASC No. 605-45.

Accrued expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses as of each balance sheet date. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. The significant estimates in our accrued expenses include the costs incurred for services performed by our vendors in connection with activities for which we have not yet been invoiced.

We record our expenses related to research and development activities based upon our estimates of the services received and efforts expended pursuant to quotes and contracts with vendors that conduct research and development on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the research and development expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid accordingly. Nonrefundable advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in us reporting amounts that are too high or too low in any particular period. To date, there have been no material differences between our estimates of such expenses and the amounts actually incurred.

Stock-based compensation

We account for stock-based awards in accordance with ASC Topic 718, *Compensation—Stock Compensation*, or ASC 718. ASC 718 requires all stock-based compensation awards to employees, including grants of restricted stock and stock options, to be recognized as expense in the statements of operations based on their grant date fair values. We estimate the fair value of options granted using the Black-Scholes option pricing model.

The Black-Scholes option pricing model requires the input of certain subjective assumptions, including (1) the expected stock price volatility, (2) the calculation of expected term of the award, (3) the risk-free interest rate, and (4) the expected dividend yield. Due to the lack of a public market for our common stock and a lack of company-specific historical and implied volatility data, we have based our estimates of expected volatility on the historical volatility of a group of similar companies that are publicly traded. We calculate historical volatility based on a period of time commensurate with the expected term. We compute expected volatility based on the historical volatility of a representative group of companies with similar characteristics to us, including their stages of product development and focus on the life science industry. We use the simplified method as prescribed by the Securities and Exchange Commission's Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees as we do not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. For options granted to non-employees, we utilize the contractual term of the arrangement as the basis for the expected term. We determine the risk-free interest rate based on a treasury instrument with the term consistent with the expected term of the stock options. We use an assumed dividend yield of zero as we have never paid dividends and do not have current plans to pay any dividends on common stock.

The weighted-average assumptions used in the Black-Scholes option pricing model to determine the fair value of stock options granted to employees and directors were as follows:

	Year ended December 31,		Three months ended March 31,	
	2015	2016	2016*	2017
Risk-free interest rate	2.0%	1.5%	—	2.3%
Expected dividend yield	—%	—%	—	—%
Expected term (years)	6.25	6.25	—	6.25
Expected stock price volatility	61%	69%	—	67%

* There were no stock options granted during the three months ended March 31, 2016

We expense the fair value of stock-based awards granted to employees and directors on a straight-line basis over the associated service period, which is generally the vesting period. We measure stock-based compensation awards granted to non-employees at fair value as the awards vest and recognize the resulting value as stock-based compensation expense during the period the related services are rendered. At the end of each reporting period prior to completion of the service, we re-measure the unvested portion of these awards.

In the first quarter of 2017, we made an accounting policy election to recognize forfeitures as they occur upon adoption of guidance per ASU No. 2016-09. The adoption of this ASU did not have a material impact on our financial statements. In reporting periods prior to 2017, we estimated forfeitures at the time of grant and revised in subsequent periods as necessary if actual forfeitures differed from estimates.

Through December 31, 2016, the amount of stock-based compensation expense recognized during a period was based on the value of the portion of the awards that were expected to vest. For awards granted to employees, forfeitures were estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The term ''forfeitures'' is distinct from ''cancellations'' or ''expirations'' and represents only the unvested portion of the surrendered option.

The following table presents the grant dates, numbers of underlying shares of common stock and the per share exercise prices of stock options granted between January 1, 2015 and the date of this prospectus, along with the fair value per share utilized to calculate stock-based compensation expense:

Date of issuance	Number of shares	Exercise price of award per share(1)	Fair value of common stock per share on grant date	Per share estimated fair value of award(2)(3)
5/8/2015	879,085	$ 1.53	$ 1.53	$0.90
6/12/2015	556,257	$ 1.53	$ 1.53	$0.90
9/9/2015	50,665	$ 1.53	$ 1.53	$0.90
12/17/2015	68,231	$ 1.53	$ 1.53	$0.90
5/6/2016	234,996	$1.89	$1.89	$ 1.17
8/30/2016	503,019	$4.10	$4.10	$2.61
9/16/2016	33,333	$4.10	$4.10	$2.61
12/29/2016	143,105	$5.00	$5.00	$ 3.11
1/9/2017	52,222	$5.00	$5.00	$ 3.11
3/3/2017	44,087	$6.98	$6.98	$4.37
3/14/2017	346,417	$6.98	$6.98	$4.37

(1) The Exercise Price of Award per Share represents the fair value of our common stock on the date of grant, as determined by our board of directors, after taking into account our most recently available contemporaneous valuations of our common stock as well as additional factors that may have changed since the date of such contemporaneous valuation through the date of grant.

(2) The Per Share Estimated Fair Value of Award reflects the weighted average fair value of options as estimated at the date of grant using the Black-Scholes option-pricing model.

(3) For the purposes of recording stock-based compensation for grants of options to non-employees, we measure the fair value of the award on the service completion date (vesting date). At the end of each reporting period prior to completion of the services, we re-measure the value of any unvested portion of the award based on the then-current fair value of the award and adjust expense accordingly.

Stock-based compensation totaled approximately $0.3 million, $0.7 million, $0.1 million and $0.3 million for the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, respectively. As of March 31, 2017, we had $4.3 million of unrecognized compensation expense related to stock option awards, which are expected to be recognized over weighted-average remaining vesting periods of approximately 3.4 years. We expect the impact of our stock-based compensation expense for stock options granted to employees and non-employees to grow in future periods due to the potential increases in the value of our common stock and additional headcount.

Determination of fair value of common stock on grant dates

We are a private company with no active public market for our common stock. Therefore, we have periodically determined the estimated per share fair value of our common stock at various dates using contemporaneous valuations performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, or the Practice Aid. Once a public trading market for our common stock has been established in connection with the completion of this offering, it will no longer be necessary for us to

estimate the fair value of our common stock in connection with our accounting for stock options and restricted stock, as the fair value of our common stock will be its trading price on The NASDAQ Global Market.

For financial reporting purposes, we performed common stock valuations, with the assistance of a third-party specialist, as of February 2, 2015, February 2, 2016, June 14, 2016, November 28, 2016 and January 30, 2017 which resulted in valuations of our common stock of $1.53, $1.89, $4.10, $5.00 and $6.98 per share, respectively adjusted to reflect the reverse stock split that occurred on June 15, 2017. In conducting the valuations, we considered all objective and subjective factors that we believed to be relevant for each valuation conducted, including our best estimate of our business condition, prospects and operating performance at each valuation date. Within the valuations performed, a range of factors, assumptions and methodologies were used. The significant factors included:

- the lack of an active public market for our common and our convertible preferred stock;
- the prices of shares of our convertible preferred stock that we had sold to outside investors in arm's length transactions, and the rights, preferences and privileges of that convertible preferred stock relative to our common stock;
- our results of operations, financial position and the status of our research and pre-clinical development efforts;
- the material risks related to our business;
- our business strategy;
- the market performance of publicly traded companies in the life sciences and biotechnology sectors;
- the likelihood of achieving a liquidity event for the holders of our common stock, such as an initial public offering, or IPO, or sale of the Company given prevailing market conditions; and
- any recent contemporaneous valuations of our common stock prepared in accordance with methodologies outlined in the Practice Aid.

There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These estimates and assumptions include a number of objective and subjective factors, including external market conditions, the prices at which we sold shares of preferred stock, the superior rights and preferences of securities senior to our common stock at the time of, and the likelihood of, achieving a liquidity event, such as an IPO or sale. Significant changes to the key assumptions used in the valuations could result in different fair values of common stock at each valuation date.

If we had made different assumptions, our stock-based compensation expense, net loss and net loss per share attributable to common stockholders could have been significantly different.

Common stock valuation methodologies

Our contemporaneous common stock valuations were prepared in accordance with the guidelines in the Practice Aid, which prescribes several valuation approaches for determining the value of an enterprise, such as the cost, market and income approaches, and various methodologies for allocating the value of an enterprise to its capital structure and specifically the common stock.

Our common stock valuations were prepared using the hybrid method. The hybrid method is a hybrid between the probability-weighted expected return method, or PWERM and the option-pricing method, or

OPM. The hybrid method estimates the probability-weighted average value across multiple scenarios using the OPM to allocated equity value within at least one of those scenarios.

Methods used to allocate our enterprise value to classes of securities. In accordance with the Practice Aid, we considered the various methods for allocating the enterprise value across our classes and series of capital stock to determine the fair value of our common stock at each valuation date. The methods we considered consisted of the following:

OPM. The OPM treats common stock and convertible preferred stock as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the liquidation preferences at the time of a liquidity event, such as a strategic sale or merger. The common stock is modeled as a call option on the underlying equity value at a predetermined exercise price. In the model, the exercise price is based on a comparison with the total equity value rather than, as in the case of a regular call option, a comparison with a per share stock price. Thus, common stock is considered to be a call option with a claim on the enterprise at an exercise price equal to the remaining value immediately after the convertible preferred stock liquidation preference is paid.

The OPM uses the Black-Scholes option-pricing model to price the call options. This model defines the securities' fair values as functions of the current fair value of a company and uses assumptions, such as the anticipated timing of a potential liquidity event and the estimated volatility of the equity securities.

PWERM. Under the PWERM methodology, the fair value of common stock is estimated based upon an analysis of future values for the company, assuming various outcomes. The common stock value is based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome is discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock.

Hybrid method. The hybrid method is a PWERM where the equity value in one of the scenarios is calculated using an OPM. In the hybrid method used by us, we considered two types of future-event scenarios: an IPO and an unspecified liquidity event. The equity value for the IPO scenario was determined using the guideline public company, or GPC, method under the market approach. The equity value for the unspecified liquidity event scenario was determined using the GPC method or a back-solve method. The relative probability of each type of future-event scenario was determined based on an analysis of market conditions at the time, including then-current IPO valuations of similarly situated companies, and our expectations as to the timing and likely prospects of the future-event scenarios.

In our application of the GPC method, we considered publicly traded companies in the biopharmaceutical industry that recently completed IPOs as indicators of our estimated future value in an IPO. We then discounted that future value back to the valuation date at an appropriate risk-adjusted discount rate.

When appropriate, we used a hybrid backsolve method to reconcile the equity values assumed for the IPO and OPM scenarios to the equity value indicated by a transaction in our preferred shares.

In the OPM scenario, the assumed volatility factor was based on the historical trading volatility of our publicly traded peer companies. At each valuation date, a determination was made by us as to the appropriate volatility to be used, considering such factors as the expected time to a liquidity event and our stage of development.

For each of the scenarios in the hybrid method, we applied a discount for lack of marketability to the common stock to account for the lack of access to an active public market.

Results of operations

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

The following table summarizes our results of operations for the three months ended March 31, 2016 and 2017, together with the changes in those items:

(in thousands)	Three months ended March 31, 2016	2017	Dollar change
Collaboration revenue	$ 3,697	$ 4,290	$ 593
Operating expenses:			
Research and development	7,436	10,106	2,670
General and administrative	1,621	2,296	675
Total operating expenses	9,057	12,402	3,345
Other income (expense), net	4	51	47
Total other income (expense)	4	51	47
Net loss	$(5,356)	$ (8,061)	$(2,705)

Collaboration revenue

The increase in collaboration revenue from $3.7 million during the three months ended March 31, 2016 to $4.3 million during the comparable period of 2017 is primarily due to revenue recognized on our XMT-1522 Takeda agreement that was executed in January 2016.

Research and development expense

Research and development expense increased by $2.7 million from $7.4 million for three months ended March 31, 2016 to $10.1 million for the three months ended March 31, 2017, an increase of 36%. The following table summarizes our research and development expenses for the three months ended March 31, 2016 and 2017:

(in thousands)	Three months ended March 31, 2016	2017	Dollar change
Employee compensation	$1,889	$ 3,219	$1,330
External research and development	4,034	2,971	(1,063)
License fee / milestone payment	—	1,500	1,500
External clinical and regulatory	370	880	510
Lab consumables	543	794	251
Facilities costs	505	565	60
Depreciation	95	177	82
Total research and development expenses	$7,436	$10,106	$2,670

The increase in research and development expense was primarily attributable to the following:

- an approximately $1.5 million milestone paid to Adimab in connection with our XMT-1522 clinical trial;
- approximately $1.3 million in increased employee compensation and $0.3 million in increased lab consumables primarily due to an increase in headcount as our programs advanced towards clinical trials;
- approximately $1.1 million in decreased external research and development expenses for IND-enabling pre-clinical and toxicology studies for XMT-1522 and timing of manufacturing activities;
- approximately $0.5 million in increased external clinical and regulatory expenses due to the commencement of our first in-human trial for our lead candidate XMT-1522; and
- approximately $0.1 million in increased facility related costs.

We expect our research and development expenses to increase as we continue our clinical development of XMT-1522, commence clinical development of XMT-1536, if preclinical studies are successful, and continue to advance our preclinical product candidate pipeline and invest in improvements in our ADC technologies.

General and administrative expense

General and administrative expense increased by $0.7 million from $1.6 million during the three months ended March 31, 2016 to $2.3 million for the three months ended March 31, 2017, an increase of 42%. The following table summarizes our general and administrative expenses for the three months ended March 31, 2016 and 2017:

	Three months ended March 31,		Dollar
(in thousands)	2016	2017	change
Employee compensation	$ 642	$ 930	$288
Consulting and professional services	618	1,004	386
Facilities	90	99	9
Other	271	263	(8)
Total general and administrative expenses	$1,621	$2,296	$675

The increase in general and administrative expense was primarily attributable to the following:

- approximately $0.3 million in increased personnel costs primarily due to additional headcount as we build the infrastructure to support the growth of the research and development organization and advance our lead programs towards clinical trials; and
- approximately $0.4 million in increased professional fees, including external patent and corporate legal fees, corporate communications and public relations costs.

We expect that our general and administrative expense will increase in future periods as we expand our operations and incur additional costs in connection with being a public company. These increases will likely include legal, auditing and filing fees, additional insurance premiums and general compliance and consulting expenses.

Other income (expense), net

Other income (expense) was less than $0.1 million for the three months ended March 31, 2016 and March 31, 2017. The increase in other income (expense) was related to the recognition of interest income in the three months ended March 31, 2017 due to higher cash equivalents balances.

Comparison of years ended December 31, 2015 and 2016

The following table summarizes our results of operations for the years ended December 31, 2015 and 2016, together with the changes in those items:

	Year ended December 31,		Dollar
(in thousands)	2015	2016	change
Collaboration revenue	$ 10,359	$ 25,171	$14,812
Operating expenses:			
Research and development	21,353	32,008	10,655
General and administrative	5,347	6,984	1,637
Total operating expenses	26,700	38,992	12,292
Other income (expense), net	(87)	121	208
Total other income (expense)	(87)	121	208
Net loss	$(16,428)	$(13,700)	$ 2,728

Collaboration revenue

The increase in collaboration revenue from $10.4 million for the year ended December 31, 2015 to $25.2 million for the year ended December 31, 2016 is primarily due to revenue recognized on our Takeda XMT-1522 agreement that was executed in January 2016.

Research and development expense

Research and development expense increased by $10.7 million from $21.4 million for the year ended December 31, 2015 to $32.0 million for the year ended December 31, 2016, an increase of 50%. The following table summarizes our research and development expenses for the years ended December 31, 2015 and 2016:

	Year ended December 31,		Dollar
(in thousands)	2015	2016	change
Employee compensation	$ 6,011	$ 9,194	$ 3,183
External research and development	12,014	15,630	3,616
External clinical and regulatory	182	1,887	1,705
Lab consumables	1,545	2,489	944
Facilities costs	1,362	2,266	904
Depreciation	239	542	303
Total research and development expenses	$21,353	$32,008	$10,655

The increase in research and development expense was primarily attributable to the following:

- approximately $3.2 million in increased employee compensation and $0.9 million in increased lab consumables primarily due to an increase in headcount as our programs advanced towards clinical trials;
- approximately $3.6 million in increased external research and development expenses for IND-enabling pre-clinical and toxicology studies for XMT-1522 as well as the commencement of manufacturing activities for our two lead programs;
- approximately $1.7 million in increased external clinical and regulatory expenses due to the commencement of our first in-human trial for our lead candidate XMT-1522; and
- approximately $0.9 million in increased facility costs due to a new lease for additional office and lab space.

We expect our research and development expenses to increase as we continue our clinical development of XMT-1522, commence clinical development of XMT-1536, if preclinical studies are successful, and continue to advance our preclinical product candidate pipeline and invest in improvements in our ADC technologies.

General and administrative expense

General and administrative expense increased by $1.6 million from $5.3 million during the year ended December 31, 2015 to $7.0 million for the year ended December 31, 2016, an increase of 31%. The following table summarizes our general and administrative expenses for the years ended December 31, 2015 and 2016:

	Year ended December 31,		Dollar
(in thousands)	2015	2016	change
Employee compensation	$1,946	$2,874	$ 928
Consulting and professional services	2,248	2,664	416
Facilities	240	400	160
Other	913	1,046	133
Total general and administrative expenses	$5,347	$6,984	$1,637

The increase in general and administrative expense was primarily attributable to the following:

- approximately $0.9 million in increased personnel costs primarily due to additional headcount as we build the infrastructure to support the growth of the research and development organization and advance our lead programs towards clinical trials; and
- approximately $0.4 million in increased professional fees, including external patent and corporate legal fees, corporate communications and public relations costs.

We expect that our general and administrative expense will increase in future periods as we expand our operations and incur additional costs in connection with being a public company. These increases will likely include legal, auditing and filing fees, additional insurance premiums and general compliance and consulting expenses.

Other income (expense), net

Other income (expense) was $(0.1) million for the year ended December 31, 2015 compared to $0.1 million for the year ended December 31, 2016. The change in other income (expense) was primarily related to the recognition of interest income in the year ended December 31, 2016 due to higher cash equivalents balances.

Liquidity and capital resources

Sources of liquidity

We have financed our operations from July 2012 to date primarily through gross proceeds of $95.5 million from private placements of our convertible preferred stock and proceeds of $99.7 million from our strategic partnerships. As of March 31, 2017, we had cash and cash equivalents of $88.5 million.

Cash flows

The following table provides information regarding our cash flows for the years ended December 31, 2015 and 2016 and for the three months ended March 31, 2016 and 2017:

	Year ended December 31,		Three months ended March 31,	
(in thousands)	2015	2016	2016	2017
Net cash (used in) provided by operating activities	$(9,636)	$ 31,588	$32,071	$(10,910)
Net cash used in investing activities	(783)	(1,084)	(395)	(471)
Net cash provided by (used in) financing activities	9,960	58,259	31	(401)
Increase (decrease) in cash and cash equivalents	$ (459)	$88,763	$31,707	$ (11,782)

Net cash (used in) provided by operating activities

Net cash provided by operating activities for the three months ended March 31, 2016 was $32.1 million as compared to net cash used in operating activities of $10.9 million during the three months ended March 31, 2017. We incurred losses during both periods, however during the three months ended March 31, 2016, our operating loss was offset by an increase in deferred revenue of $37.4 million primarily from the 2016 Takeda agreements.

Net cash used in operating activities for the year ended December 31, 2015 was $9.6 million as compared to net cash provided by operating activities of $31.6 million during the year ended December 31, 2016. We incurred losses during both periods, however the 2016 operating loss was offset by an increase in deferred revenue of $43.2 million primarily from the 2016 Takeda agreements.

Net cash used in investing activities

Net cash used in investing activities was $0.4 million during the three months ended March 31, 2016 compared to $0.5 million during the three months ended March 31, 2017. Net cash used in investing activities for the three months ended March 31, 2016 and 2017 consisted primarily of purchases of laboratory equipment.

Net cash used in investing activities was $0.8 million during the year ended December 31, 2015 compared to $1.1 million during the year ended December 31, 2016. Net cash used in investing activities for the years ended December 31, 2015 and 2016 consisted primarily of purchases of property and equipment. The

increase was primarily due to purchases of laboratory equipment and leasehold improvements to support additional headcount.

Net cash provided by (used in) financing activities

Net cash provided by (used in) financing activities was less than $0.1 million during the three months ended March 31, 2016 compared to $(0.4) million during the three months ended March 31, 2017. Net cash provided by financing activities during the three months ended March 31, 2016 primarily resulted from proceeds received from exercises of stock options. Net cash used in financing activities during the three months ended March 31, 2017 resulted from payments of initial public offering costs offset by proceeds received from exercises of stock options.

Net cash provided by financing activities was $10.0 million during the year ended December 31, 2015 compared to $58.3 million during the year ended December 31, 2016. The cash provided by financing activities during both periods primarily resulted from proceeds received from Series B-1 in 2015 and Series B-1 and C-1 in 2016 private placements of our convertible preferred stock.

Funding requirements

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

We expect that the net proceeds from this offering, together with our existing cash and cash equivalents will enable us to fund our operating plan through at least the next 24 months. Our future capital requirements will depend on many factors, including:

- the scope, progress, results and costs of drug discovery, pre-clinical development, laboratory testing and clinical trials for our product candidates;
- the scope, prioritization and number of our research and development programs;
- the costs, timing and outcome of regulatory review of our product candidates;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- the achievement of milestones or occurrence of other developments that trigger payments under any collaboration agreements we obtain;
- the extent to which we are obligated to reimburse, or entitled to reimbursement of, clinical trial costs under future collaboration agreements, if any;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- the extent to which we acquire or in-license other product candidates and technologies;

- the costs of securing manufacturing arrangements for clinical and commercial production; and
- the costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory approvals to market our product candidates.

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

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, continuation of existing partnerships and the creation of new strategic partnerships and licensing arrangements. We do not have any committed external source of funds outside of those to be earned in connection with our agreements with Merck KGaA and Takeda, if development activities are successful under those agreements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise funds through additional strategic partnerships 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 drug development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual obligations

The following table summarizes our significant contractual obligations as of payment due date by period at March 31, 2017:

(in thousands)	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 years
Operating lease commitments(1)	$3,939	1,962	1,977	—	—

(1) Represents future minimum lease payments under our non-cancelable operating leases, which expire through March 2019. The minimum lease payments above do not include any related common area maintenance charges or real estate taxes.

We enter into agreements in the normal course of business with contract research organizations for clinical trials and clinical supply manufacturing and with vendors for pre-clinical research studies, and other services and products for operating purposes. We have not included these payments in the table of contractual obligations above since the contracts are cancelable at any time by us, generally upon 30 days prior written notice to the vendor. Milestone payments associated with our license agreements have not been included in the above table of contractual obligations as we cannot reasonably estimate if or when they will occur. We expect to become obligated to make milestone payments of approximately $1.3 million

through mid-2018 in connection with development of XMT-1522 and XMT-1536. In addition, total future milestones under our agreements with Adimab and Recepta are $90.5 million and are not reflected in the table above.

Off-balance sheet arrangements

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

Quantitative and qualitative disclosures about market risk

We are exposed to market risk-related to changes in interest rates. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments, including cash and cash equivalents, are in a money market fund that invests in U.S. Treasury obligations.

We are currently not exposed to market risk related to changes in foreign currency exchange rates, but we may contract with vendors that are located Asia and Europe and may be subject to fluctuations in foreign currency rates at that time.

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the years ended December 31, 2015 and 2016 or the three months ended March 31, 2016 and 2017.

JOBS act

In April 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was enacted. Section 107 of the JOBS Act provides that an ''emerging growth company,'' or an EGC, can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended, or the Securities Act, for complying with new or revised accounting standards. Thus, an EGC can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

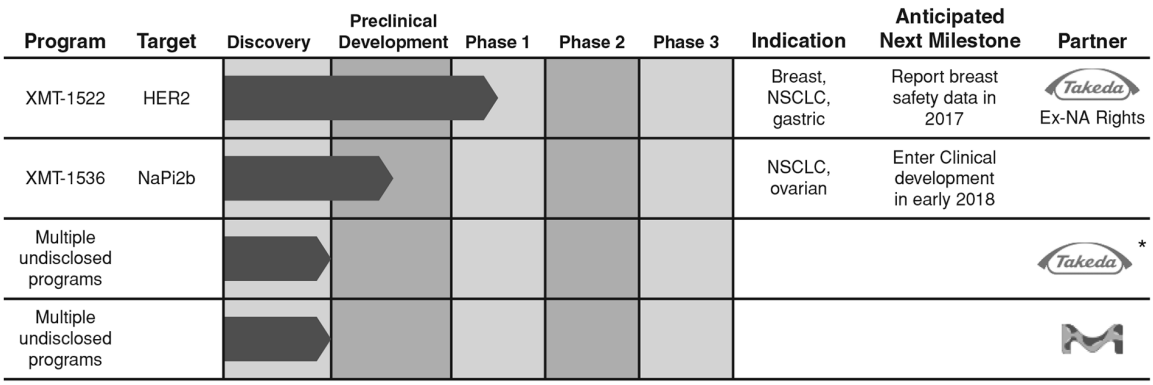
We are in the process of evaluating the benefits of relying on other exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an EGC, we intend to rely on certain of these exemptions, including without limitation, (i) providing an auditor's attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act and (ii) complying with any requirement that may be adopted by the Public Company Accounting Oversight Board, or PCAOB, regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, known as the auditor discussion and analysis. We will remain an EGC until the earlier of (i) the last day of the fiscal year in which we have total annual gross revenues of $1.07 billion or more; (ii) the last day of the fiscal year following the fifth anniversary of the date of the completion of this offering; (iii) the date on which we have issued more than $1.07 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the Securities and Exchange Commission.

Business

Mersana Therapeutics

Overview

We are a clinical stage biopharmaceutical company focused on developing antibody drug conjugates, or ADCs, that offer a clinically meaningful benefit for cancer patients with significant unmet need. We have leveraged 20 years of industry learning in the ADC field to develop proprietary technologies that enable us to design ADCs to have improved efficacy, safety and tolerability relative to existing ADC therapies. Our most advanced platform, Dolaflexin, has been used to generate a pipeline of proprietary ADC product candidates to address patient populations that are not currently amenable to treatment with traditional ADC-based therapies. Our lead product candidate, XMT-1522, is a HER2-targeted ADC currently in a Phase 1 dose escalation study in primarily breast cancer patients as well as non-small cell lung cancer (NSCLC) and gastric cancer, with interim safety results expected by the end of 2017. Upon the completion of dose escalation, we plan to expand clinical development of XMT-1522 into additional breast cancer, NSCLC, and gastric cancer patient populations, all of which are not addressed by existing HER2 therapies. Our second product candidate, XMT-1536, is an ADC targeting NaPi2b, an antigen broadly expressed in ovarian cancer and NSCLC. We expect XMT-1536 to enter clinical development in early 2018. Beyond our two lead product candidates, we continue to invest in our earlier stage product candidates and in our ADC technologies. In addition, we have established a strategic partnership with Takeda Pharmaceutical Company Limited, or Takeda, under which they obtained rights to XMT-1522 outside of the United States and Canada. We have also established strategic research and development partnerships with Takeda and Merck KGaA for the development and commercialization of additional ADC product candidates against a limited number of targets selected by our partners based on our Dolaflexin platform. We believe the potential of our ADC technologies, supported by our world-class management team and protected by our robust intellectual property portfolio, will allow us to develop targeted and highly tailored therapies to help cancer patients become cancer survivors. Our current product candidates all based on our Dolaflexin platform, are summarized in the chart below:



*Mersana has one post-Phase 1 opt-in

ADCs are an established therapeutic approach in oncology used to selectively deliver a highly potent chemotherapeutic payload directly to tumors thereby minimizing toxicity to surrounding healthy tissue. An ADC consists of an antibody attached to a chemotherapeutic ‘‘payload’’ via a molecule known as a linker. The antibody provides targeting capability against a distinct antigen expressed preferentially on a tumor cell, which restricts the ADC binding only to those cells that express the target antigen. Upon binding to the tumor cell antigen, the ADC is internalized by the tumor cell and the payload is released, killing the

cell in a targeted manner. Currently, there are two approved and broadly available ADCs, (i) brentuximab vedotin marketed by Seattle Genetics, Inc., or Seattle Genetics, and Takeda and (ii) ado-trastuzumab emtansine marketed by Genentech, Inc., or Genentech, a member of the Roche Group, or Roche, which achieved combined worldwide net sales in excess of $1 billion in 2016. There are also approximately 60 ADCs presently in development in over 300 clinical studies, the vast majority of which are focused on the treatment of cancer. We believe the commercial success of previously approved ADCs, combined with the number of ADCs currently in clinical development, demonstrates the potential of ADCs to become a mainstay of cancer treatment.

Despite the promise of ADCs, companies in the field have faced certain challenges in developing product candidates that achieve the optimal therapeutic index, or the balance between efficacy and tolerability. These challenges are characterized as follows:

- **Linker stability:** Linkers must be stable in the bloodstream to ensure that free payload is not released into circulation prior to delivery into the tumor. Free payload in circulation causes toxicity. Efforts to design better linkers to increase stability have, in turn, reduced the efficiency of payload release once the ADC is internalized in the tumor cell, resulting in decreased efficacy.
- **Drug-to-antibody ratio:** Increases in the number of payload molecules delivered per antibody internalization event increases potency. However, the drug-to-antibody ratio, or DAR, has typically been limited to three to four payload molecules per antibody due to aggregation, poor pharmacokinetics and loss of drug-like properties of the ADC at levels above this threshold. Other attempts to increase efficacy have involved the introduction of ultra-potent payloads, however these efforts appear to face safety and tolerability challenges, necessitating even further reduced DAR to maintain acceptable pharmacokinetics and drug-like properties.
- **Target antigen expression level:** Tumor cells typically require a threshold number of payload molecules to be internalized in order to kill the cell. Antigens with lower levels of expression have proven less desirable as targets for ADCs, as a result of fewer binding, internalization and payload delivery events to drive cell-killing activity. In turn, this has limited the number of cancers amenable to treatment with ADC-based approaches, as the use of ADCs requires antigen targets to be highly expressed on tumor cells.
- **Bystander effect:** A released payload that is able to diffuse into and kill neighboring tumor cells, irrespective of antigen expression, is known as having a "bystander effect." While the bystander effect has been shown to improve efficacy by killing adjacent tumor cells, it is also associated with indiscriminate healthy cell killing, which leads to dose limiting toxicities, such as neutropenia.

Our proprietary and highly differentiated Dolaflexin platform is designed to overcome these challenges and achieve improved efficacy, safety and tolerability, hence improving the therapeutic index, compared to traditional ADC technologies. Unlike traditional ADCs, where the payload is attached directly to the antibody via a linker, our ADCs feature antibodies attached to multiple units of Dolaflexin, which each consist of our Fleximer polymer scaffold conjugated to several proprietary auristatin payload molecules. As a result, we believe our ADCs offer the following benefits relative to traditional ADCs:

- **Improved linker stability:** Fleximer is a biodegradable, highly biocompatible and highly water soluble polymer scaffold. The Fleximer creates a highly hydrophilic microenvironment, which protects the linker and the payload and results in a highly stable ADC in circulation. We have demonstrated in non-human primates that an ADC utilizing Dolaflexin is highly stable, with less than 0.05% of free payload detected in circulation.

- **Higher drug-to-antibody ratio:** The hydrophilic microenvironment of Fleximer shields the highly hydrophobic payload molecules and allows the ADC to achieve a DAR of 12 to 15 while maintaining acceptable pharmacokinetics and drug-like properties in animal models. In multiple preclinical models, our lead product candidates, XMT-1522 and XMT-1536, both of which are based on the Dolaflexin platform, have demonstrated that higher DAR results in a significant increase in efficacy relative to traditional ADCs administered at comparable or even higher dose levels.
- **Expanded range of addressable target antigen expression levels:** As a result of higher DAR, our ADCs can deliver more payload to the tumor cell per antibody binding and internalization event. As a result, in preclinical models we have shown efficacy against tumors with lower levels of antigen expression. Our lead product candidates, XMT-1522 and XMT-1536, have demonstrated efficacy in animal models of low antigen-expressing tumors where alternative ADC platforms have shown either weak or no efficacy.
- **Controlled bystander effect:** We have designed our proprietary auristatin payload, used in the Dolaflexin platform, with a feature, referred to as DolaLock, that allows us to capture the benefits of the bystander effect while minimizing potential toxicities to healthy tissue. Specifically, the initial payload released from the ADC in the tumor is capable of a bystander effect. However, as the payload is metabolized over time, it loses the ability to diffuse into neighboring cells and becomes trapped in the cell, preventing further diffusion into healthy tissues.

The benefits of the Dolaflexin platform have resulted in tolerable doses in our preclinical models well in excess of the efficacious doses. Based on these findings, we have advanced XMT-1522 into Phase 1 development, and we expect to advance XMT-1536 into clinical development by early 2018. We believe these advantageous characteristics of our Dolaflexin platform provide a substantial opportunity to develop clinically meaningful ADC therapies with potential to address a broader range of cancers than traditional ADC-based approaches.

We have assembled a management team with extensive, relevant experience, including specific ADC experience, at leading pharmaceutical companies such as Millennium Pharmaceuticals, Inc., Takeda, Sanofi S.A., Merck & Co., Inc., Biogen, Inc., MedImmune, Inc. and Bayer AG. We are supported by our board of directors and scientific advisory board, who offer complementary experience in drug discovery and development, as well as expertise in building public companies, management and business development. Our key investors include funds managed by New Enterprise Associates, Arrowpoint Partners, Cormorant Asset Management, F-Prime Capital Partners, Rock Springs Capital and Wellington Management, as well as Pfizer and our strategic partner, Takeda. We believe that our highly differentiated platform, together with the team we have assembled, positions us well to generate best-in-class ADCs with the potential to transform the lives of cancer patients.

Our strategy

Our goal is to become a leading oncology company by leveraging the potential of our innovative and differentiated ADC technologies. Our strategy to achieve this goal is based on:

- **Rapidly advancing the clinical development of XMT-1522.** We have designed a robust Phase 1 study of XMT-1522 to yield data that could be sufficient to demonstrate clinical proof-of-concept in four indications beginning in the second half of 2018. If the proof-of-concept study is positive, we will utilize the data from this study, with our partner Takeda, to drive our global registration strategy. XMT-1522 is in a Phase 1 dose escalation study in breast cancer patients, and we plan to expand this into four patient cohorts: two breast cancer, one NSCLC and one gastric cancer. We expect to release interim safety data for breast cancer by the end of 2017.

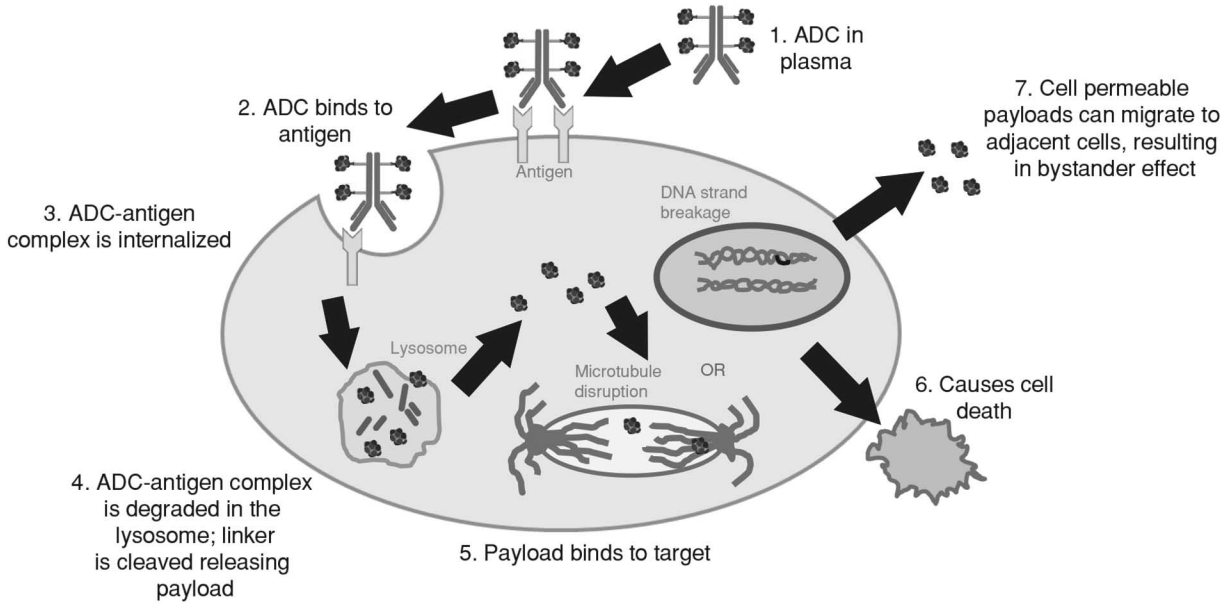
- **Moving XMT-1536 into clinical development and building a pipeline of ADCs that address the significant unmet medical needs of cancer patients.** Our second product candidate, XMT-1536, is an ADC targeting NaPi2b and has demonstrated significant anti-tumor activity in preclinical models of ovarian cancer and NSCLC. We expect XMT-1536 to enter clinical development in early 2018. We plan to utilize our proprietary ADC technology platforms and expertise to rapidly augment our pipeline in order to deliver clinically meaningful drug candidates. We plan to submit one Investigational New Drug Application, or IND, every 12 to 24 months. Under our existing strategic partnership with Takeda, we have a right to participate in the development and commercialization of one of Takeda's ADC product candidates in the United States, which we may exercise to further supplement our pipeline.
- **Expanding our ADC technology platform capabilities.** We intend to establish a leading position in the field of ADCs by continuing to advance platform innovations that further broaden the potential of our ADCs to deliver clinically meaningful benefit for cancer patients. Our areas of focus include the development of alternative scaffolds to drive homogeneity of our ADCs, alternative payloads to address additional indications and drug resistance and alternative targeting moieties to improve tumor penetration and biodistributuion. We believe these efforts may lead to improved efficacy and tolerability as well as expansion of the addressable patient population.
- **Evaluating strategic partnerships to maximize the value of our programs and platforms.** Our platform technologies, and product discovery and development capabilities, drive the potential for multiple clinically meaningful opportunities for cancer patients. In order to preserve a disciplined drug development and commercialization focus, we may choose to enter into strategic partnerships that facilitate our ability to bring differentiated product candidates to more patients. Our current partnerships with Takeda and Merck KGaA exemplify different aspects of this strategy and could be worth up to $2.1 billion to us in milestone payments plus additional royalties, if product candidates under these agreements are successfully developed and commercialized.
- **Attracting and retaining people that share our commitment to scientific excellence and patient care.** In addition to our team's deep experience with ADC science, drug development and operational management, we believe that our accomplishments are a testament to the talent and commitment of our people. Our team is driven by a shared passion to advance therapies that make a significant difference in the lives of cancer patients. We will continue to cultivate the collaborative and passionate workplace culture that has allowed us to advance this mission.

Background on antibody drug conjugates (ADCs) for cancer

Overview

ADCs for cancer traditionally consist of an antibody attached to a chemotherapeutic ''payload'' via a chemical known as a linker. The antibody provides targeting capability against a distinct antigen selectively expressed on a tumor cell, resulting in the ADC binding only to those cells that express the target antigen. Upon binding to the antigen, the ADC is internalized by the tumor cell and the payload is released through either cleavage of the linker or degradation of the antibody. Cell death results once the threshold level of payload has been internalized by the target cell. Figure 1 illustrates the general mechanism by which ADCs kill tumor cells. The individual components of an ADC dictate the efficacy, safety and tolerability of the treatment. Historically, ADC development has involved making compromises between features which may improve efficacy at the expense of safety and tolerability, and vice versa. The challenge of optimizing this balance is exemplified by the dearth of approved ADC products, despite the technology having existed for over 20 years.

Figure 1.



Monoclonal antibodies

The first component of an ADC is a monoclonal antibody, which is the highly specific targeting agent enabling binding to the tumor antigen and internalization of the ADC into the tumor cell. Antibodies themselves are a well established therapeutic modality, with $85.4 billion in worldwide sales in 2015.

In the context of an ADC, two factors are considered in the selection of the antigen to which the antibody is targeted: (i) preferential expression on tumor cells with as limited as possible expression on healthy tissues and (ii) level of antigen expression on tumor cells. The amount of payload delivered to the tumor cell is related to the binding of the ADC to the antigen and internalization, and as a result, it is generally recognized that very high and consistent (or homogeneous) antigen expression throughout the tumor correlates with higher efficacy. For example, ado-trastuzumab emtansine is indicated for HER2-positive late stage metastatic breast cancer. The HER2 antigen expression levels in the tumors of these patients is very high, and it has been reported that patients with the highest levels of HER2 expression derive the most therapeutic benefit. The ability to achieve a therapeutic concentration of payload in the tumor quickly diminishes as the level of antigen expression decreases, which may explain why current ADC approaches have only demonstrated efficacy in a limited range of tumors with relatively high expression of a target antigen.

Chemotherapeutic payloads

The second component of an ADC is a chemotherapeutic payload, or cell-killing agent, too potent to be delivered as a standalone therapy. In the context of an ADC, the payload, which is conjugated to the antibody, is selectively delivered to the tumor as a result of the targeting ability of the antibody thereby limiting toxicity to healthy tissues.

The majority of payloads currently used in ADCs fall within one of two categories, based on mechanism of action: anti-tubulin agents or DNA damaging agents. Many of the ADCs in clinical development use anti-tubulin linker-payload platforms developed by ImmunoGen, Inc. (SMCC-DM1 and SPDB-DM4) and Seattle Genetics (mc-MMAF and vc-MMAE). Anti-tubulin payloads are preferentially toxic to dividing cells versus resting cells, a feature that is beneficial for ADCs where the target antigen is also expressed on healthy resting cells. Anti-tubulins typically have potencies of 0.1 to 10 nM but are not effective against certain tumors, such as colorectal. More recently, in order to increase potency and potentially expand addressable indications, the field has seen an emergence of novel DNA damaging payload classes, such as pyrrolobenzodiazepine, or PBD, dimers, with potencies 100 to 1000 times higher than the anti-tubulins. These payloads bind to the cell's DNA, leading to cell death. To date, ADCs utilizing PBD dimers have been shown to be highly potent in early clinical development, however due to toxicities, the dose and duration of these ADCs have been limited.

After internalization by the targeted tumor cell, some ADC payloads have an additional ability to passively diffuse into and kill neighboring cells. This bystander effect can be very useful in enhancing the efficacy of these ADCs in tumors with heterogeneous antigen expression by providing a mechanism to kill neighboring tumor cells which do not express the target antigen. While the bystander effect can be beneficial in terms of efficacy, it can also be detrimental in terms of tolerability, as it allows for cell-killing independent of targeting.

Chemical linkers

A third critical component of an ADC is the chemical linker used to attach the payload to the antibody, as it directly affects efficacy, safety and tolerability. Ideally, a linker provides a stable connection between the payload and the antibody in systemic circulation. Premature release of the payload in systemic circulation can cause significant off-target toxicity. For example, gemtuzumab ozogamicin, the first ADC to gain regulatory approval in 2000, was later withdrawn from the U.S. market in 2010 due to safety concerns believed to be in part a consequence of poor linker stability.

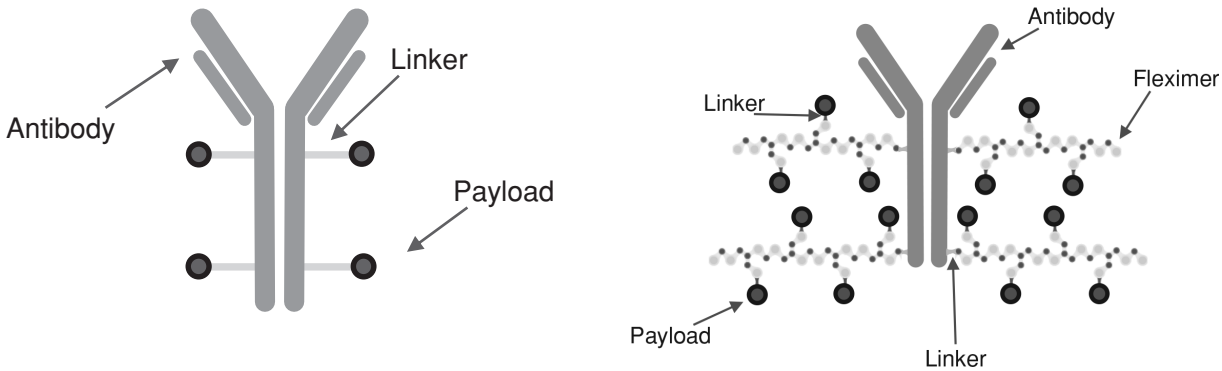
Upon internalization of the ADC by the targeted tumor cell, the linker should release the payload from the antibody to promote rapid and efficient killing of the tumor. Linkers used for ADCs fall into one of two categories: cleavable or non-cleavable. In general, cleavable linkers are designed to be stable in the circulation and to be selectively cleaved as a result of an inherent property of the tumor, such as degradation by tumor-specific enzymes. In contrast, non-cleavable linkers are resistant to this type of degradation and instead rely on the degradation of the antibody to release the payload. As a result, the released linker-payload remains attached to a fragment of the antibody, which limits the cell permeability and bystander effect. The solubility of the linker-payload combination employed also has a significant influence on the properties of the resulting ADC. Many linkers and payloads used in traditional ADCs are highly insoluble, which limit DAR to three to four due to aggregation and poor drug-like properties of ADCs. Because existing conjugation approaches use direct conjugation, the site of payload attachment can also influence the stability and performance of the ADC, as the microenvironments surrounding each attachment site can differ and affect the properties of the linker-payload.

Dolaflexin platform

Our proprietary and highly differentiated Dolaflexin platform is designed to increase the efficacy, safety and tolerability of ADCs by overcoming key limitations of existing technologies based on direct conjugation. Dolaflexin consists of Fleximer, a biodegradable, highly biocompatible, water soluble polymer, to which are attached multiple copies of our proprietary auristatin drug payload, using a linker specifically optimized for

use with our polymer. The high water solubility of the Fleximer polymer compensates for the low solubility of the payload, surrounding the payload and protecting it from aggregation. Multiple copies of this Dolaflexin polymer-drug conjugate can then be attached to an antibody of choice, which significantly increases the payload capacity of the resulting ADC. As shown in the schematic in Figure 2, this approach differs from most other ADC technologies where the payload is directly conjugated to the antibody via a linker. Using the Dolaflexin platform, we have been able to generate ADCs with DAR between 12 to 15 while maintaining acceptable pharmacokinetics and drug-like properties in animal models. This represents a three to four fold increase in DAR relative to the traditional ADC approach.

Figure 2.



Direct conjugation

Fleximer ADC

Below is a summary of key advantages that we believe our proprietary Dolaflexin platform offers over other existing ADC technologies. We believe these properties will enable us to develop ADCs with an improved therapeutic index that may broaden the scope of addressable cancer patients for which ADC therapies are amenable.

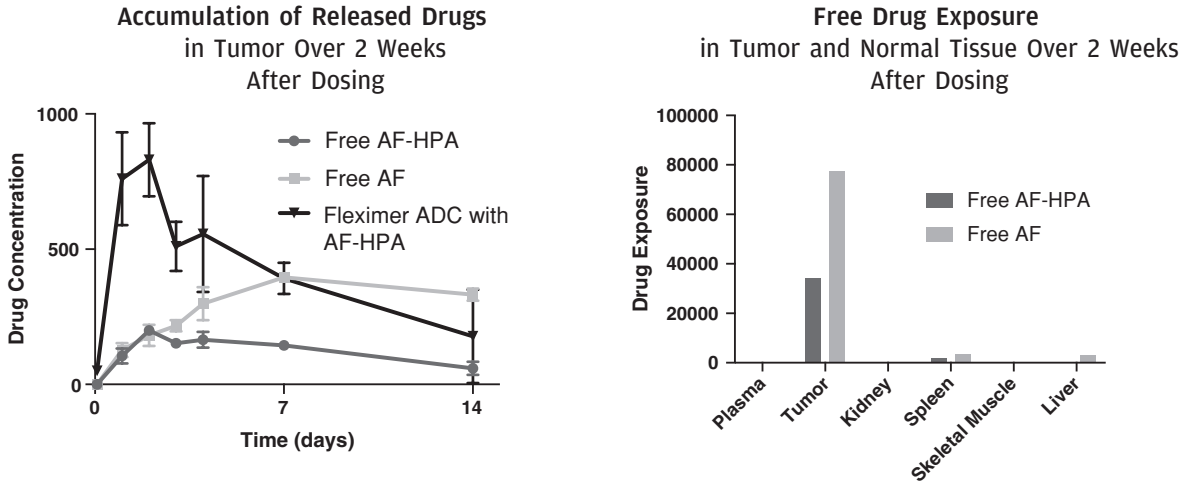
- **Improved linker stability:** There are two important linkers contributing to the stability of a Dolaflexin ADC: a non-cleavable linker attaching the Fleximer to the antibody and a cleavable linker attaching the payload to the Fleximer. The Fleximer provides for a highly hydrophilic and homogeneous microenvironment that stabilizes the payload-linker in circulation. However, the cleavable nature of the payload-linker results in rapid release of the payload upon internalization into the tumor cell.

- **Higher drug-to-antibody ratio:** Dolaflexin consists of Fleximer conjugated to up to four molecules of our proprietary auristatin payload. Our ADCs typically consist of three to four Dolaflexin units attached to each antibody, which allows us to achieve significantly higher DAR compared to other ADC approaches. For example, our lead proprietary product candidates, XMT-1522 and XMT-1536, each carry between 12 to 15 payload molecules per antibody, which we believe will result in greater efficacy than traditional ADCs with a lower DAR. Importantly, Fleximer is extremely water soluble, which helps maintain the pharmacokinetics and drug-like qualities of the ADC in animal models even at relatively high DARs.

- **Expanded range of addressable antigen expression levels:** The higher DAR enabled by our Dolaflexin platform results in more chemotherapeutic payload being released into the tumor cell for every binding and internalization event. As a result, we have demonstrated in animal models that Dolaflexin ADCs have efficacy against tumors with lower levels of antigen expression where traditional ADCs have not been effective.

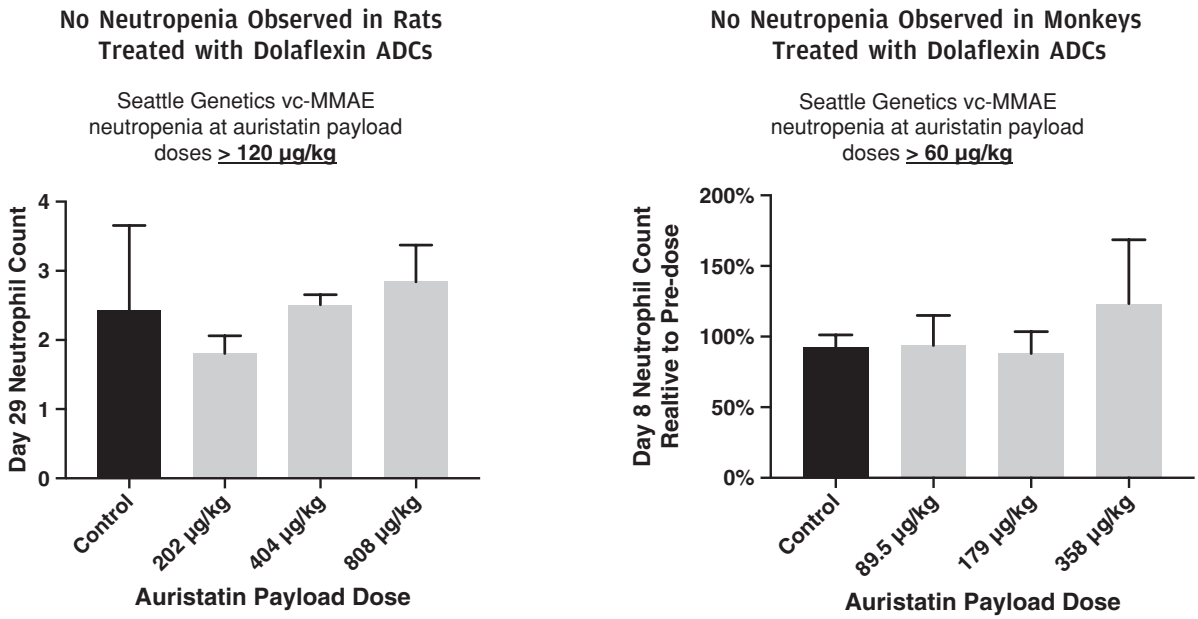
- **Controlled bystander effect:** Our proprietary auristatin chemotherapeutic drug payload, has been specifically designed to maintain efficacy while improving safety and tolerability compared to payloads used in conventional ADCs. Upon internalization of the ADC into the tumor cell, cleavage of the linker occurs to release Auristatin F-hydroxypropylamide, or AF-HPA, as the primary chemotherapeutic payload. AF-HPA is a highly potent, freely cell-permeable anti-tubulin agent, which readily kills rapidly dividing tumor cells but is not toxic to non-dividing cells. Since AF-HPA is freely cell-permeable, it can diffuse into adjacent tumor cells and kill them in an antigen-independent manner through the bystander effect. However, release of AF-HPA into the systemic circulation can also lead to toxicity if taken up by normal healthy cells. To counteract this, our proprietary auristatin payload has been engineered with the DolaLock feature that causes AF-HPA to convert into the non-cell permeable chemotherapeutic, auristatin F, or AF, when metabolized over time inside the cell. While AF can still kill dividing cells if generated intracellularly, it is approximately 8-fold less potent than AF-HPA at killing dividing cells when outside the cell. Consistent with this, AF was significantly better tolerated than AF-HPA in rat safety studies. Figure 3 shows the accumulation of AF-HPA and its metabolite, AF, in a mouse tumor model demonstrating the conversion over time of AF-HPA to AF, the trapping of free AF in the tumor cells and its almost negligible accumulation in healthy tissues.

Figure 3. Accumulation of AF-HPA/AF in Tumor Consistent with Efficacy and Tolerability



The more limited exposure of free AF to healthy tissues corresponds to lower drug toxicities, such as neutropenia, seen in safety studies of Dolaflexin ADCs compared to competitor technologies (e.g., SGEN vc-MMAE), with seven out of nine ADCs that have reported Phase 1 results showing dose-limiting neutropenia. As shown in Figure 4, neutrophil counts did not decline in either rats or monkeys at Dolaflexin ADC doses above the maximum doses that can be administered of vc-MMAE ADCs, which are frequently dose-limited by neutropenia and sepsis.

Figure 4. Neutrophil Counts as a Function of Dolaflexin ADC Dose (in Auristatin Equivalents)



Our product candidates

We are leveraging our platform to develop a robust pipeline of clinically meaningful cancer therapies. Our pipeline strategy focuses on targets that have been biologically validated (either as ADCs or through another modality) and where the advantages of our platform can lead to a clinically superior therapeutic. Our lead product candidate, XMT-1522, is in Phase 1 dose escalation studies. Our second product candidate, XMT-1536, is in late preclinical studies and we expect it to enter clinical development in early 2018. A robust discovery stage pipeline supports our objective of bringing one new product candidate into clinical development every 12 to 24 months. In addition, our partners have multiple ADC product candidates leveraging our technology in late discovery. Based on plans presented to us by our partners, several of these product candidates have the potential to enter into full preclinical development in the next 12 months.

XMT-1522: our HER2-targeted ADC

Program description

Our lead product candidate, XMT-1522, is a Dolaflexin ADC targeting HER2-expressing tumors. It is currently in Phase 1 clinical development. HER2 belongs to a family of signaling molecules that are highly and preferentially expressed on the surface of various cancer cells and are known to play a role in promoting tumor cell growth. XMT-1522 is composed of a proprietary fully human anti-HER2 antibody, selected for its advantageous internalization properties and its ability to bind to a unique epitope distinct from the epitopes of trastuzumab and pertuzumab, two approved therapies that also target HER2. The development of XMT-1522 leverages the differentiating aspects of our Dolaflexin platform to focus on HER2-expressing patient populations that have the highest unmet medical need because they are not served by the existing HER2 therapies currently on the market. We are actively recruiting and dosing primarily breast cancer patients with a HER2 score of 1+ or greater and NSCLC and gastric cancer patients with interim safety results expected in late 2017.

Unmet need and epidemiology

Currently approved HER2-targeted therapies are indicated only for breast or gastric cancer patients who are considered HER2-positive based on well established, Food and Drug Administration, or FDA, approved tests that rely on immunohistochemistry, or IHC, or genetic methods. Patients are classified by their level of HER2 expression on a scale ranging from 0 to 3+, with 3+ representing the highest level of HER2 expression. Patients with HER2 3+ expression or who have gene amplification that results in them having multiple copies of the HER2 gene are considered HER2-positive. There is a significantly larger population of patients with HER2 expression of 1+ or 2+ and without gene amplification, and for those patients, there are currently no approved HER2-targeted therapies in breast, gastric or other cancers.

Our development plan is supported by extensive preclinical data demonstrating XMT-1522's increased potency compared to currently marketed HER2 therapies, including against HER2 1+ and 2+ breast and gastric cancers where existing therapies are not approved and HER2 expressing breast, NSCLC and gastric cancers where existing therapies have failed. The following chart shows the initial therapeutic focus for our XMT-1522 product candidate. We are focused in areas that leverage the advantages of XMT-1522 and where patients have limited treatment options.

Indication	HER2 Population	First Registration Opportunity	Estimated Incidence (US/EU, First Label)	Comparator Therapy
Breast Cancer	HER2 1+/2+	2nd line chemotherapy (hormone-receptor negative or hormone resistant/refractory)	36,000	Single agent cytotoxic chemotherapy
	HER2-Positive	3rd line (following trastuzumab, pertuzumab, T-DM1)	10,500	Lapatinib + capecitabine
NSCLC	HER2 2+/3+	2nd line (post-platinum + PD-1)	45,000	docetaxel
Gastric Cancer	HER2-Positive	2nd line (following trastuzumab)	6,500	Cytotoxic chemotherapy

Among breast cancer patients, approximately 55% express HER2 at the 1+ or 2+ level without HER2 gene amplification. These patients are not eligible to receive existing HER2 therapies (trastuzumab, pertuzumab or ado-trastuzumab emtansine) and have limited other options. Initially, we are studying XMT-1522 in advanced or metastatic breast cancer patients who express HER2 at the 1+ and 2+ levels (whether hormone negative or have become hormone resistant or refractory) and have progressed on at least one line of chemotherapy. If proof-of-concept is established in this patient population, opportunities exist to move to an earlier stage of treatment in this hard-to-treat patient population. We are also planning to develop XMT-1522 for HER2 positive breast cancer patients whose tumors have progressed after treatment with other HER2 therapies, such as ado-trastuzumab emtansine and pertuzumab, and have limited other treatment options.

Among patients with NSCLC, expression of the HER2 protein at the 2+ or 3+ level has been shown to occur at a rate of approximately 20%, with as high as 26% in adenocarcinoma patients. We are developing XMT-1522 in HER2 2+ and 3+ patients who have previously been treated with a platinum-containing regimen. Unlike HER2-positive breast cancer, HER2 expression in NSCLC is not a dominant driver of tumor growth and hence HER2-targeted antibodies have failed in this setting. If proof-of-concept is established in this population, opportunities exist to move earlier in the treatment paradigm or consider combination

treatment with PD-1/PD-L1 antibodies, the emerging standard of care in front line NSCLC. Our emerging preclinical data appear to also support the potential for synergy with immune checkpoint inhibitors.

Among gastric cancer patients, approximately 15% to 20% are HER2-positive. Trastuzumab is approved for this patient population but ado-trastuzumab emtansine has failed to demonstrate a survival benefit. We are developing XMT-1522 in HER2-positive patients who have received prior therapy with trastuzumab. If proof-of-concept is established in this population, opportunities exist to address gastric cancer patients expressing HER2 at the 1+ and 2+ levels.

Clinical development plan and timeline

XMT-1522 is in a Phase 1, open label, multi-center study and is administered as an intravenous infusion once every three weeks. There are two parts to the Phase 1 study: (i) a dose escalation primarily in breast cancer patients with a HER2 score of 1+ or greater and (ii) a dose expansion in four parallel patient cohorts. At the request of investigators we have amended the protocol for the dose escalation study to allow for NSCLC patients expressing HER2 at 2+ or 3+ and gastric patients that are HER2 positive post trastuzumab treatment. The primary objective of the dose escalation part of the study is to establish the maximum-tolerated dose and a recommended Phase 2 dose. The objective of the cohort expansion stage is to further assess tolerability at the recommended Phase 2 dose and to estimate the objective response rate and durability of response in four patient cohorts.

The dose escalation part of the study utilizes a 3+3 design with a three week evaluation period for dose limiting toxicity, or DLT. A Safety Review Committee will review the data after each dose cohort of three patients completes the DLT evaluation period and will recommend three patients be enrolled at the next dose level if a dose is reasonably well-tolerated. After the first cycle, patients may continue to receive XMT-1522 until disease progression, provided the drug is well-tolerated and patients continue to derive clinical benefit in the opinion of the investigator.

The three dose escalation cohorts in the Phase 1 clinical trial of XMT-1522 at doses of 2 mg/m^2, 4 mg/m^2, and 8 mg/m^2 have been fully enrolled (three patients per dose cohort). All enrolled patients have a diagnosis of advanced breast cancer. All patients in the 2 mg/m^2 and 4 mg/m^2 dose cohorts have had central laboratory evaluation of tumor specimens for HER2 status. Of these six patients, three patients were enrolled with HER2-positive disease, two with a HER2 IHC result of 1+/2+ without gene amplification; and one without detectable HER2 expression or amplification. The 2 mg/m^2 and 4 mg/m^2 dose cohorts completed the first cycle without dose-limiting toxicity, or DLT. XMT-1522 has been well tolerated. As of the June 1 data cut-off, there have been no XMT-1522 related serious adverse events, or SAEs, nor XMT-1522 related Grade 3 or Grade 4 adverse events, or AEs. AEs possibly attributable to XMT-1522 include itching during infusion, anorexia, constipation, and vomiting. These have been seen only in one patient and have been mild in severity (Grade 1). One patient with heavily pre-treated HER2-positive breast cancer has experienced stable disease for 18+ weeks and remains on study. This patient has reported symptomatic improvement in bone metastasis-related bone pain, with decreased utilization of oral analgesics. Stable disease has also been seen in a patient with HER2 1+/2+ breast cancer. First cycle DLT evaluation is on-going for the 8 mg/m^2 dose cohort.

After completion of dose escalation, the expansion part of the study will be opened in four cohorts of approximately 20 patients each:

- Cohort 1: Advanced breast cancer, HER2 IHC 1+ or HER2 IHC 2+ without HER2 gene amplification
- Cohort 2: Advanced breast cancer, HER2-positive, who have received prior ado-trastuzumab emtansine

- Cohort 3: Advanced gastric cancer, HER2-positive, who have received prior trastuzumab
- Cohort 4: Advanced NSCLC, HER2 IHC 2+ or 3+, any HER2 gene amplification or mutation status who have received prior platinum-based chemotherapy

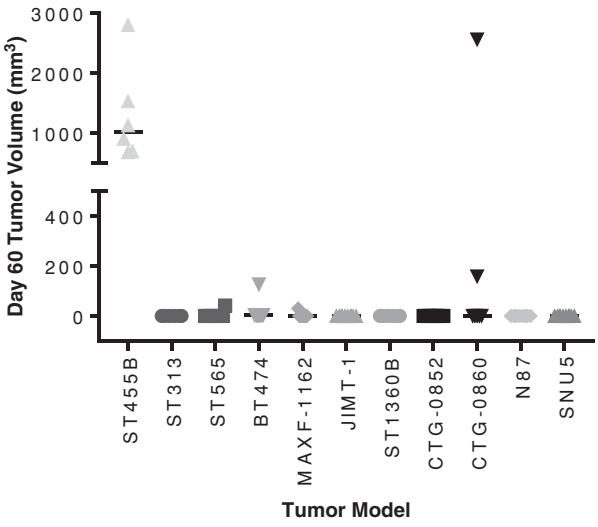
The expansion part of the study is designed to provide an initial estimate of the response rate for XMT-1522 in each cohort and the durability of the observed responses. These data will be used to support end-of-Phase 1 interactions with regulatory authorities and to inform the design of subsequent studies. We anticipate that observation of a clinically meaningful rate of durable responses in any of the cohorts could be used to support the initiation of pivotal studies to support approval in the indication.

Preclinical efficacy studies

We have studied the efficacy of XMT-1522 in xenograft as well as in patient-derived models representing diverse levels of HER2 expression and tumor types. The data are summarized in the waterfall plot below, showing the best tumor response to XMT-1522 across 15 tumor models representing six indications (Figure 5). These indications informed our clinical development plan. Each column represents an individual tumor model and measures the best overall change in tumor volume relative to the measured tumor volume on the first day of XMT-1522 administration. A more negative value represents greater anti-tumor efficacy of XMT-1522, with a 100% reduction in tumor volume corresponding to complete regression of the tumor to the point where it was no longer measurable. In these experiments, XMT-1522 was given in doses of 3 mg/kg or below, either as a single dose on Day 0 of the experiment or in three weekly doses on Days 0, 7 and 14. Experiments were allowed to run until at least Day 60, or at least 45 days following the last administration of XMT-1522. As depicted in the graph, XMT-1522 was able to achieve complete or near-complete tumor regressions in 11 out of the 15 models. Of the 11 models that achieved complete or near-complete regression, the regressions were sustained until Day 60 in 10 of the models even in the absence of additional therapy, showing the durability of tumor regressions induced by XMT-1522 (Figure 6).

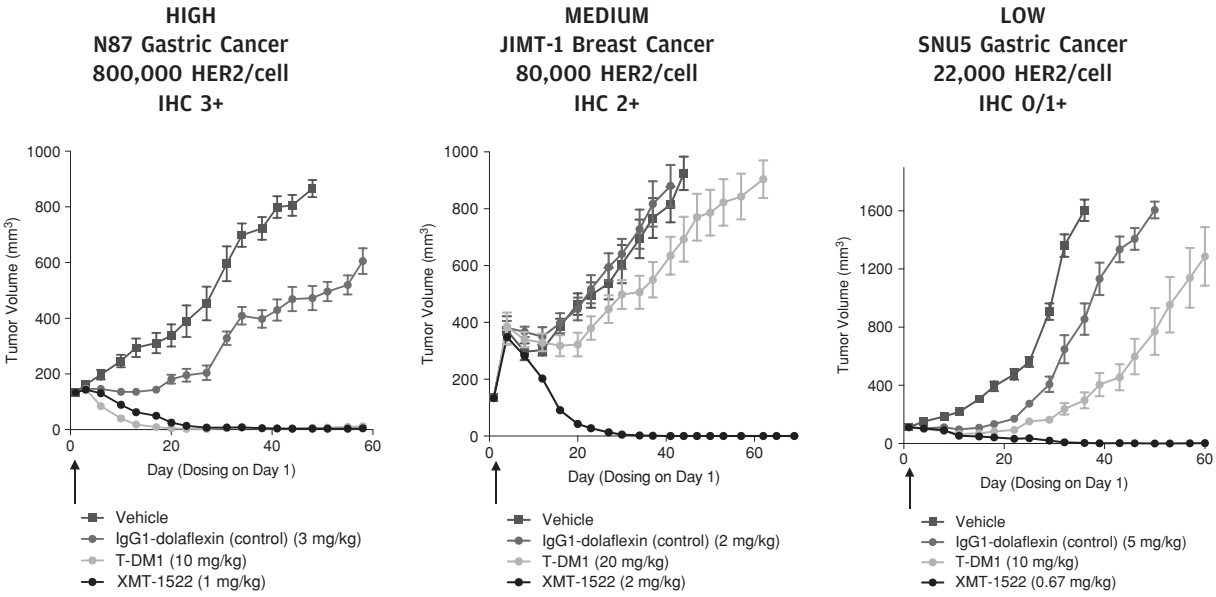
Figure 5. Waterfall Plot of Best Tumor Response to XMT-1522 in Xenograft Models

Figure 6. Day 60 Tumor Volumes in Models Achieving Complete or Near-Complete Regression After Treatment with XMT-1522



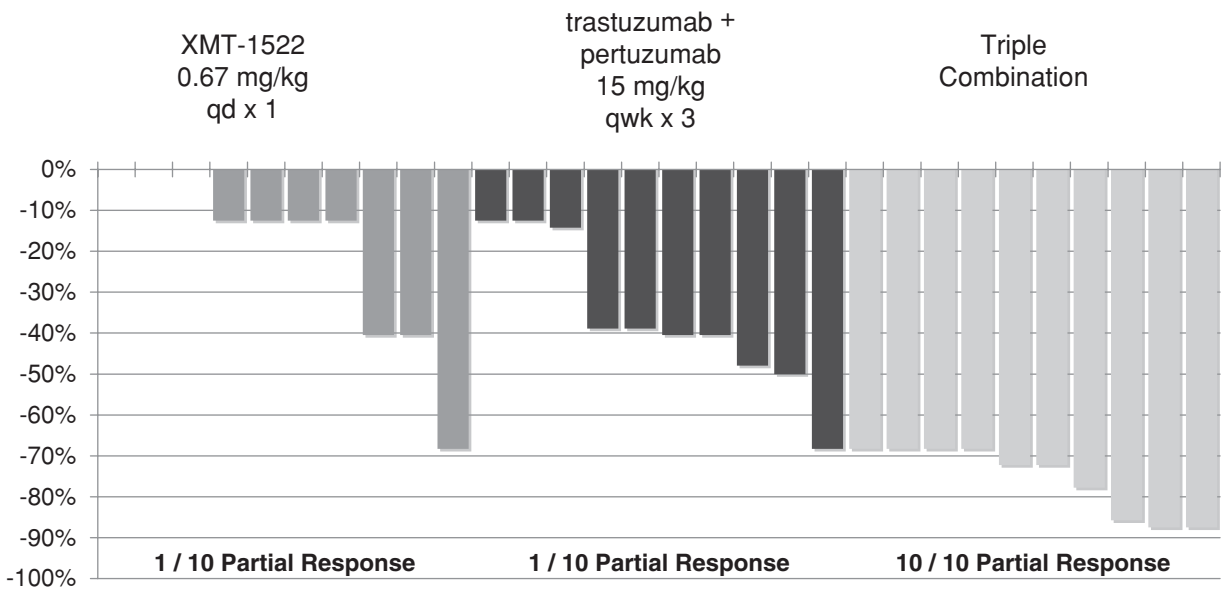
To evaluate the relative efficacy of XMT-1522 compared to ado-trastuzumab emtansine, we conducted studies in tumor models representing high, medium and low levels of HER2 expression (Figure 7). In the high HER2-expressing model (NCI-N87 gastric cancer, HER2 gene amplified, HER2 3+), XMT-1522 induced complete tumor regressions after a single 1 mg/kg dose on Day 1. As we expected, ado-trastuzumab emtansine was similarly active in HER2 high expressing tumors after a single dose of 10 mg/kg. However, in the medium- and low-expressing models, XMT-1522 was still able to induce durable complete tumor regressions where ado-trastuzumab emtansine failed to do so, even at doses at least 10-fold higher than the XMT-1522 dose. XMT-1522 was also capable of inducing complete tumor regressions in models of acquired resistance to ado-trastuzumab emtansine, both in a model generated in the laboratory and in a tumor model obtained from a patient who responded to ado-trastuzumab emtansine but then experienced disease progression. In contrast, in the model obtained from a patient, lapatinib/gemcitabine, the current standard of care, did not have material impact on tumor growth. These data suggest that our ADCs may have improved efficacy relative to traditional ADCs, even in tumors where the target antigen is expressed at moderate to low levels.

Figure 7. Comparing XMT-1522 to Ado-Trastuzumab Emtansine in Models Representing High, Medium and Low Levels of HER2 Expression



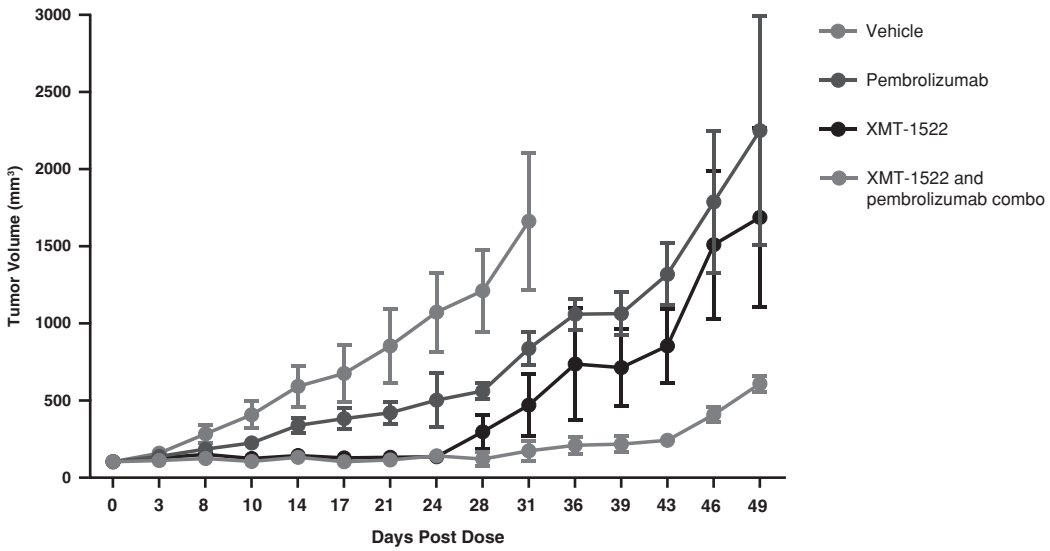
To evaluate the potential of XMT-1522 in combination with other agents, we conducted preclinical studies with other HER2-targeted therapies and checkpoint inhibitors currently used in the treatment of cancer. Since XMT-1522 binds to an epitope distinct from the HER2 epitopes to which trastuzumab and pertuzumab bind, it does not compete with either of those antibodies for HER2 binding. We have shown that the triple combination of XMT-1522 with trastuzumab and pertuzumab is more active than XMT-1522 alone or the trastuzumab/pertuzumab doublet in a HER2-driven tumor model (N87 HER2-positive gastric cancer) (Figure 8). In this experiment, XMT-1522 was administered at a dose lower than the maximally efficacious dose to manifest the triplet synergy. Consequently, we believe XMT-1522 has the potential to be combined with either or both of those monoclonal antibodies, even at doses of trastuzumab and pertuzumab over 20-fold higher than the dose of XMT-1522, to promote more complete inhibition of HER2 signaling while not interfering with delivery of the XMT-1522 chemotherapeutic payload.

Figure 8. Synergy Seen in Triple Combination with Trastuzumab and Pertuzumab



ADC payloads, including AF-HPA, have been shown to induce immunogenic cell death, or ICD. Chemotherapeutic compounds that induce ICD are hypothesized to increase the presentation of tumor antigens in the tumor microenvironment and to generate an immune response to the tumor, resulting in increased sensitivity of the tumor to immune checkpoint drugs such as the PD-1 or PD-L1 inhibitors. We have tested this hypothesis with XMT-1522 in a mouse model carrying a humanized immune system and a patient-derived NSCLC tumor expressing HER2. In this experiment, we tested the PD-1 antibody pembrolizumab alone, XMT-1522 alone and the combination of XMT-1522 with pembrolizumab. As shown in Figure 9, the combination of XMT-1522 with pembrolizumab is more active than either therapy alone. We believe these data support the potential to combine Dolaflexin ADCs with immune checkpoint inhibitors in cancer indications where checkpoint inhibitors are active.

Figure 9. XMT-1522 in Combination with Pembrolizumab Results in Greater Efficacy than Either Treatment Alone



Preclinical safety studies

We have evaluated the safety and tolerability of XMT-1522 in both non-human primates and rats. Based on these studies, we have established that the XMT-1522 plasma concentrations necessary for efficacy in the variety of models studied are below the highest tolerated dose in non-human primates. Furthermore, we have established that XMT-1522 is stable in circulation, has predictable pharmacokinetics and has a safety profile acceptable for Phase 1 testing in patients with advanced cancer. The plasma concentrations of XMT-1522 ADC and the monoclonal antibody were similar over the course of the study and the concentration of free AF-HPA payload was less than 0.05% the concentration of antibody conjugated AF-HPA at all time points, indicating the stability of the ADC in circulation. Plasma exposure to free AF payload was also low and peaked at a later time point compared to free AF-HPA, consistent with the metabolism of our AF-HPA payload. There was no evidence of cardiotoxicity in non-human primates at any dose tested, including at doses significantly above the highest tolerated dose in dose finding studies. The most pronounced hematalogic finding in non-human primates was a transient decrease in platelet counts not associated with clinically-significant bleeding. Neutropenia was not observed in either species. Opthalmological evaluation was performed in preclinical studies in both species. Adverse ocular events related to XMT-1522 were seen only at the highest dose tested in the rat, associated with plasma exposure of XMT-1522 greater than eight fold higher than the exposure at the highest non-severely toxic dose in

non-human primates. Gastrointestinal toxicity was the primary toxicity associated with XMT-1522 and was seen only in non-human primates. These effects were fully reversible at tolerated doses.

XMT-1536: our NaPi2b-targeted ADC

Program description

Our second product candidate, XMT-1536, is a Dolaflexin ADC targeting NaPi2b-expressing tumors. NaPi2b is an antigen highly expressed in 60 to 90% of both non-squamous NSCLC and epithelial ovarian cancer. However, the expression of NaPi2b in normal tissue is restricted to a limited subset of cell types, rendering it an ideal antigen for ADC development. XMT-1536 is composed of a proprietary anti-NaPi2b antibody, selected for its advantageous internalization properties. XMT-1536 is currently in IND-enabling studies, and we expect it to enter clinical development in early 2018.

Genentech's lifastuzumab vedotin, an ADC targeting NaPi2b utilizing the Seattle Genetics vc-MMAE platform, provided encouraging results in Phase 1 studies in ovarian cancer, where a 41% confirmed objective response rate by RECIST criteria was achieved without evidence of target-mediated toxicities. However, in a randomized Phase 2 study in platinum-resistant ovarian cancer, lifastuzumab vedotin failed to demonstrate a statistically-significant benefit to liposomal doxorubicin, the comparator, on the primary endpoint of progression free survival, or PFS, despite a numerically superior response rate and improvement in median progression-free survival. Surprisingly, responses in NSCLC patients were also limited despite widespread expression of the NaPi2b target in the Phase 1 patients. Genentech has since discontinued development of lifastuzumab vedotin. The partial validation of the NaPi2b target provided by these studies forms the basis of our rationale to develop XMT-1536 as a potentially clinically meaningful ADC for the treatment of epithelial ovarian cancer and non-squamous NSCLC. Based on our preclinical data, we believe that XMT-1536 may offer improved efficacy and a wider therapeutic index in these patients.

Unmet need and epidemiology

Ovarian cancer patients who progress during or within six months of completion of platinum-based therapy are considered to have platinum-resistant disease. These patients have limited treatment options other than single agent platinum-based chemotherapies (e.g., docetaxel, paclitaxel) or targeted therapies, such as bevacizumab (in patients who have not received beviciaumab for treatment of earlier stage disease), olaparib (for patients carrying germline mutations in the BRCA1 and BRCA2 genes) and rucaparib (for patients carrying germline and somatic mutations in the BRCA1 and BRCA2 genes), which have either shown limited overall survival benefit (e.g., bevacizumab) or have yet to demonstrate survival benefit (e.g., olaparib and rucaparib). We plan to initially test XMT-1536 in patients with platinum-resistant ovarian cancer. If proof-of-concept is established, there are opportunities to address treatment of primary ovarian cancer and recurrent, platinum-sensitive disease where platinum-based chemotherapy regimens remain the standard of care.

Given the breadth of NaPi2b expression in non-squamous NSCLC, we believe XMT-1536 also has the potential to treat a broad population of NSCLC patients. Initially, we plan to test XMT-1536 in platinum-resistant NSCLC patients. If proof-of-concept is established in this population, we believe that there are opportunities to move earlier in the treatment paradigm or consider combination treatment with PD-1/PD-L1 antibodies, the emerging standard of care in front line NSCLC. Our preclinical data indicating that the AF-HPA payload used in XMT-1536 induced immunogenic cell death support the potential for synergy with immune checkpoint inhibitors.

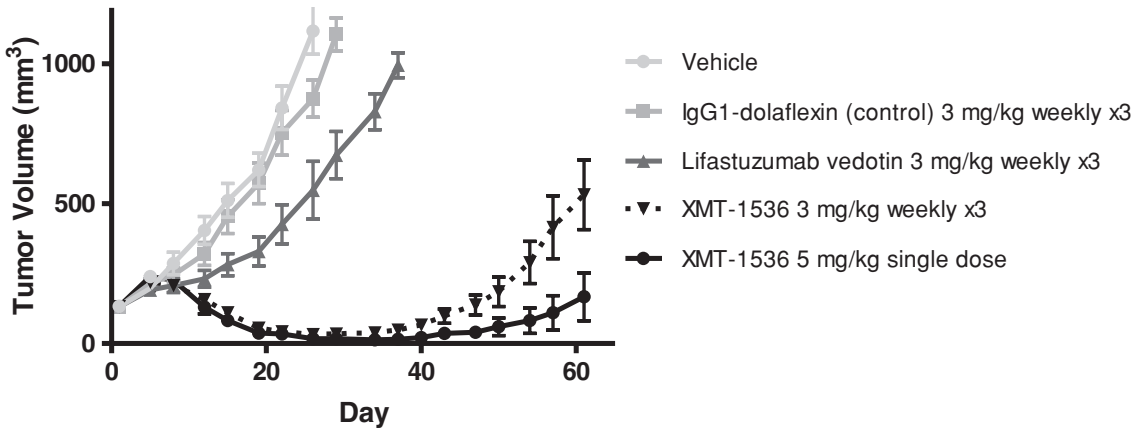
There are currently no FDA-approved tests to measure NaPi2b expression on tumor cells, however given the prevalence of its expression on epithelial ovarian and non-squamous NSCLC tumors, our initial clinical

studies of XMT-1536 will be conducted without prospective identification of patients with NaPi2b-expressing tumors. Nonetheless, we have developed and are validating an immunohistochemistry assay to measure NaPi2b expression which we intend to use retrospectively to confirm the broad prevalence of NaPi2b expression in our target patient populations while correlating those expression levels with the efficacy observed in such patients. To date, data generated using our assay has found NaPi2b expression in 15 out of 20 and 16 out of 20 samples of ovarian and lung cancer, respectively. If results are sufficiently robust, we believe there is an opportunity to develop XMT-1536 without the need for a companion diagnostic. If a companion diagnostic is required for the label for XMT-1536, we may seek approval for our validated assay as a companion diagnostic or we may contract with third parties to create and obtain approval for a companion diagnostic.

Preclinical studies

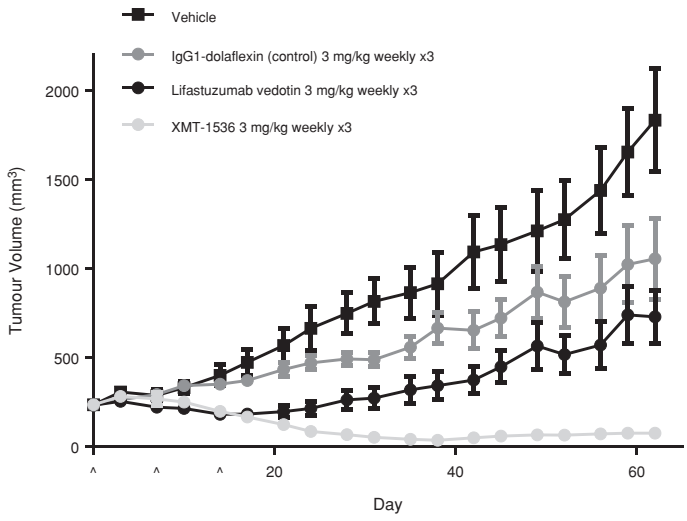
XMT-1536 induced complete tumor regressions in the OVCAR3 ovarian cancer model after a single dose of 5 mg/kg or three weekly doses of 3 mg/kg. In comparison, lifastuzumab vedotin administered via three weekly doses of 3 mg/kg failed to achieve tumor regressions (Figure 10). Genentech published regressions in this model at doses of 6 mg/kg and above, but, given the dose-limiting neutropenia seen in monkeys at doses above 3 mg/kg, these higher doses are unlikely to be translationally relevant.

Figure 10. Comparison of XMT-1536 to Lifastuzumab Vedotin in the OVCAR3 Ovarian Cancer Xenograft Model



Established CTG-0852 patient-derived NSCLC xenograft tumors were treated with XMT-1536, lifastuzumab vedotin or non-binding IgG1-dolaflexin control ADC at a 3 mg/kg dose once weekly for three weeks and tumor volume was measured for 60 days. XMT-1536 treatment resulted in nearly complete regression of the treated tumors that was durable for 45 days after cessation of treatment. In contrast, treatment with the non-binding ADC control or lifastuzumab vedotin led to modest tumor growth control without achieving tumor regression.

Figure 11. Comparison of XMT-1536 to Lifastuzumab Vedotin in the CTG-0852 NSCLC Xenograft Model



XMT-1536 was also tested in eight patient-derived tumor models of NSCLC adenocarcinoma, where it led to complete or near-complete tumor regressions in five of eight models and significant tumor growth delay in two of the remaining three models (Figure 12). All models were treated with three weekly doses of 3 mg/kg or less. The models were not pre-selected for NaPi2b expression and represented a range of tumor genotypes frequently observed in NSCLC adenocarcinoma, including RAS/RAF mutant tumors, EGFR mutant tumors, ALK-translocated tumors and tumors not carrying known oncogenic drivers. As with the data presented above, each column represents an individual tumor model, and the more negative the value, the greater the degree of XMT-1536 efficacy, with negative 100% representing complete tumor regression. In these experiments, the last dose of XMT-1536 was administered on Day 14 and tumor volumes were measured until Day 60 to evaluate durability of the regressions. The regressions were maintained until Day 60 in four of the five models achieving complete or near-complete regression after a 45 day treatment-free interval, indicating good durability of the tumor regressions (Figure 13).

Figure 12. Waterfall Plot of Best Tumor Response to XMT-1536 in Eight NSCLC Adenocarcinoma Models

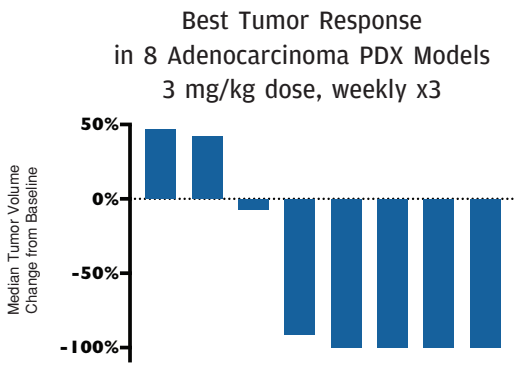
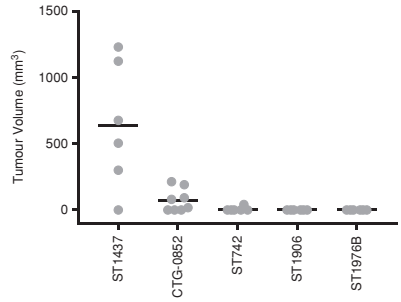


Figure 13. Day 60 Tumor Volumes in Models Achieving Complete or Near-Complete Regressions with XMT-1536



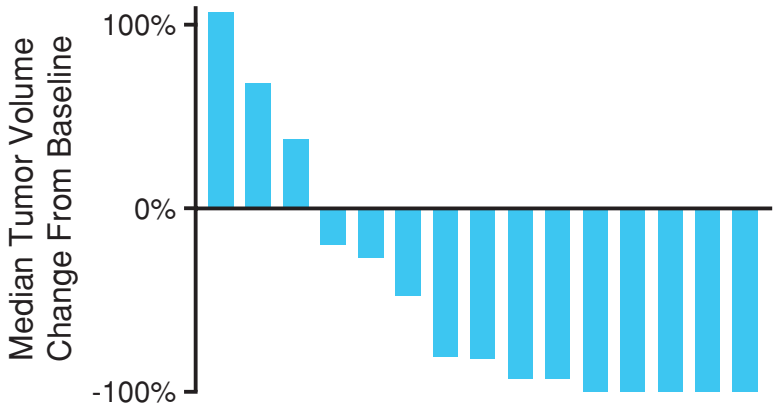
Tumor-free @ Days 60	1/6	3/6	5/6	6/6	6/6*
Day 60 TV relative to Day 0 (%)	258	-82	-100	-100	-100

* ST1976B achieves CR durable to Day 60 at 1 mg/kg dose level

Fifteen established ovarian cancer patient-derived xenograft tumor models were treated with XMT-1536 at a 3 mg/kg dose once weekly for three doses. Tumor volumes were measured a regular intervals after treatment and the best post-dose tumor change from baseline was calculated for each model (minimum post-dose tumor volume at any post-dose time point divided by pre-dose tumor volume). Each bar in the waterfall plot below represents a single tumor model; median tumor volume change from the baseline less than zero represents tumor regression with -100% tumor volume change, indicating complete tumor regression. NaPi2b expression was measured in untreated tumors from each model using a NaPi2b IHC test. Some degree of tumor regression was observed in 12 out of 15 models. Preliminary assessment of NaPi2b IHC suggests less responsive models have low expression of NaPi2b (Figure 14).

Figure 14. Tumor Response Date from 15 Epithelial Ovarian Tumor Patient-Derived Xenografts

Regression Observed in 12/15 Models



Preclinical tolerability data and therapeutic index

XMT-1536 is cross-reactive with cynomolgous monkey and rat NaPi2b, allowing an informative evaluation of whether XMT-1536 retains good tolerability in these commonly used safety species. In the exploratory repeat dose NHP study, there was no evidence of neutropenia at payload doses that were at least four times the maximum tolerated dose of lifastuzumab vedotin and at least two times the dose that caused fatal neutropenia and sepsis in monkeys treated with lifastuzumab vedotin. Further, there was no evidence of significant pulmonary toxicity. We believe these data, combined with the strong efficacy data for XMT-1536 in models of NSCLC and ovarian cancer, are indicative of a favorable therapeutic index and support moving into IND-enabling studies.

Clinical development plan and timeline

The Phase 1 study is expected to be an open label, multi-center study of XMT-1536 administered as an intravenous infusion once every three weeks. The dose escalation part of the study is expected to establish a recommended Phase 2 dose for XMT-1536 in patients primarily with advanced epithelial ovarian cancer and non-squamous NSCLC. We expect the study will not require molecular testing for eligibility and will be open to all patients regardless of NaPi2b expression. Upon completion of dose escalation, the cohort expansion segment of the study is expected to consist of two parallel cohorts of patients in each indication to demonstrate the objective response rate and durability of responses in each. Retrospective analysis of tumor response and durability of response as a function of NaPi2b expression will be performed to determine the necessity of developing a companion diagnostic for NaPi2b expression in subsequent studies. We expect XMT-1536 will enter clinical development in early 2018.

Platform development

We intend to establish a leading position in the field of ADCs by continuing to advance platform innovations that further broaden the potential of our ADCs to deliver clinically meaningful benefit for cancer patients. Our areas of focus include the development of alternative scaffolds to drive homogeneity of our ADCs, alternative payloads to address additional indications and drug resistance and alternative targeting moieties to improve tumor penetration and biodistributuion. We believe these efforts may lead to improved efficacy and tolerability as well as expansion of the addressable patient population.

Strategic partnerships

Strategic partnerships with leading biopharmaceutical companies to advance Fleximer ADC product candidates

We believe that our ADC platform has broad applicability across a number of targets. We have used strategic partnering to accelerate bringing Fleximer ADCs to patients. Since 2012, we have entered into a strategic partnership for XMT-1522 with Takeda, through its wholly owned subsidiary Millennium Pharmaceuticals, Inc., and strategic research and development partnerships with Takeda, Merck KGaA and Asana BioSciences, LLC (by assignment from Endo Pharmaceuticals Inc.) to enable development of certain ADC product candidates utilizing Fleximer. In establishing each of these partnerships, our primary objectives were to collaborate with leading biopharmaceutical companies to validate the potential of ADC product candidates utilizing Fleximer, gain meaningful near-term funding and drive significant long-term value. Under each of our partnerships, we own the rights to any improvements to our ADC platform. The details of our material existing strategic partnerships are as follows:

Takeda XMT-1522 strategic partnership

In January 2016, we entered into a collaboration agreement with Takeda for the development and commercialization of XMT-1522. Under this agreement, we granted Takeda an exclusive license under certain of our ADC-related patents and know-how to commercialize XMT-1522 outside of the United States and Canada. We will conduct certain Phase 1 development activities for XMT-1522, including the ongoing Phase 1 clinical study, at our own expense, and Takeda may also conduct Phase 1 development activities at its own expense. The parties will collaborate on the further development of XMT-1522 in accordance with a global development plan. In addition, the parties will share equally all clinical-stage manufacturing costs and any post-Phase 1 development costs incurred in connection with obtaining regulatory approval in either the United States or Canada and in certain major markets in the rest of the world. Each party will be responsible for all post-Phase 1 development costs specific to such party's territory incurred for the purpose of obtaining regulatory approval in such party's territory. Subject to certain restrictions, each party may conduct independent development of XMT-1522 and the other party may elect to use any resulting data if it agrees to share the development costs equally and pays a premium for previously incurred costs.

During 2016, we received an upfront payment of $26.5 million and a milestone payment of $20 million under this agreement. We are entitled to receive future development, regulatory and commercial milestones of up to $288 million and tiered royalties in the low- to mid-teen percentages on net sales of XMT-1522 in Takeda's territory during the applicable royalty term, if XMT-1522 is successfully developed and commercialized. Pursuant to this Agreement, Takeda invested approximately $10 million in our Series C-1 financing in June 2016.

Unless earlier terminated, this agreement will expire upon the expiration of the last royalty term for XMT-1522 under the agreement in all countries. The royalty term for XMT-1522 means, on a country-by-country basis, the period commencing upon the first commercial sale of XMT-1522 and ending upon the later to occur of: (i) expiration of the last Mersana or jointly-owned patent right that covers XMT-1522 in such country, (ii) expiration of any exclusive marketing right, data exclusivity right, orphan drug designation or other country-wide exclusive right or status conferred by any governmental authority with respect to XMT-1522 in such country, other than a patent right, or (iii) 15 years from the date of first commercial sale of XMT-1522 in such country. Upon the expiration of the royalty term for XMT-1522 on a country-by-country basis, Takeda will have a perpetual, exclusive license to XMT-1522 in such country. Takeda may terminate this agreement in its entirety for convenience upon 30 days' prior written notice at

any time up to the initiation of the first Phase 2 clinical study of XMT-1522 or upon 90 days' prior written notice following the initiation of the first Phase 2 clinical study of XMT-1522. Each party may terminate this agreement in its entirety upon bankruptcy or similar proceedings of the other party and in its entirety or on a country-by-country basis upon an uncured material breach of the agreement by the other party. Following any such termination, all rights in XMT-1522 licensed to Takeda will revert to us for further development and commercialization.

Takeda strategic research and development partnership

In March 2014, we entered into a collaboration agreement with Takeda for the development and commercialization of ADC product candidates utilizing Fleximer. We formed a strategic partnership with Takeda because of their industry expertise in oncology drug development and their experience developing and commercializing brentuximab vedotin outside of the United States, one of only two approved and broadly available ADCs. Under this agreement, Takeda received rights to select up to seven target antigens, of which it has selected four to date. Takeda is responsible for generating antibodies against the target antigens, and we are responsible for generating Fleximer and our proprietary payloads and conjugating this to the antibody to create the ADC product candidates. With respect to each target antigen selected by Takeda, we granted Takeda an exclusive, worldwide license under certain of our Fleximer ADC-related patents and know-how to develop, manufacture and commercialize ADC product candidates directed to such target antigen. Takeda is then responsible for the further development, manufacture and commercialization of these ADC product candidates. The most advanced product candidates in this partnership are in the lead optimization stage.

Takeda is responsible for its own costs in the development, commercialization and manufacture of ADC product candidates and reimburses us for our costs incurred in performing our research activities under this agreement, except in the event that we exercise our opt-in right as described below.

Through March 31, 2017, we have received $24.8 million in upfront payments and option fees under this agreement. If products are successfully developed and commercialized against all seven potential target antigens, we are entitled to receive future development, regulatory and commercial milestones of up to $1.063 billion, except in the event that we exercise our opt-in right as described below. During the applicable royalty term, we are entitled to receive tiered royalties in the mid-single digit percentages on net sales of each product targeting Takeda's first or second target antigen and in the mid- to high-single digit percentages on net sales of each product targeting Takeda's third through seventh target antigens if products are successfully developed and commercialized by Takeda and except in the event that we exercise our opt-in right as described below.

In addition, we have an option to co-develop and co-commercialize one product targeting one of Takeda's third through seventh target antigens in the United States for a payment of $15 million in cash or in our common stock, and we may exercise such option with respect to an applicable product no later than 30 days after initiation of a Phase 2 clinical study for such product or at an earlier time if Takeda intends to grant rights to such product to a third party. If we elect to exercise the option to co-develop and co-commercialize a product, we will share development costs related to such product in the United States equally with Takeda and we will be responsible for 30% of the global development costs for such product. If we elect to exercise the option to co-develop and co-commercialize a product, we will share the profits and losses related to such product in the United States equally with Takeda in lieu of certain milestones and royalties on the net sales in the United States.

Unless earlier terminated, this agreement will expire upon the expiration of the last royalty term for a product under the agreement in all countries. The royalty term means, on a product-by-product and

country-by-country basis, the period commencing upon the first commercial sale of a product and ending upon the later to occur of: (i) the later of expiration of the last Mersana patent right that would be infringed by the manufacture or commercialization of such product in such country and the expiration of the first-to-expire patent right claiming the composition of matter of the ADC contained in such product, or (ii) 10 years from the date of first commercial sale of such product in such country. Upon the expiration of each royalty term for each product on a country-by-country basis, Takeda's exclusive license will convert to a perpetual, non-exclusive, royalty-free license with respect to such product in such country. Except with respect to the target antigen of a product for which we exercised our option to co-develop and co-commercialize in the United States, Takeda may terminate this agreement in its entirety or with respect to any target antigen for convenience upon 45 days' prior written notice. Each party may terminate this agreement in its entirety upon bankruptcy or similar proceedings of the other party or upon an uncured material breach of the agreement by the other party. However, if such breach only relates to one target antigen, the agreement may only be terminated with respect to such target antigen.

Merck KGaA strategic research and development partnership

In June 2014, we entered into a collaboration agreement with Merck KGaA for the development and commercialization of ADC product candidates utilizing Fleximer for up to six target antigens. We formed a strategic partnership with Merck KGaA because of their expertise in oncology drug development. Under this agreement, we are responsible for generating ADC product candidates against Merck KGaA-selected target antigens. Merck KGaA received rights to select up to six target antigens, of which it has selected all six. Merck KGaA is responsible for generating antibodies against the target antigens, and we are responsible for generating Fleximer and our proprietary payloads and conjugating this to such antibodies to create the ADC product candidates. With respect to each target antigen selected by Merck KGaA, we granted Merck KGaA an exclusive, worldwide license under certain of our Fleximer ADC-related patents and know-how to develop, manufacture and commercialize ADC product candidates directed to such target antigen. Merck KGaA is then responsible for the further development and commercialization of these ADC product candidates. In addition, if Merck KGaA advances candidates, we are responsible for manufacturing these ADC product candidates for GLP toxicology studies and Phase 1 clinical studies at Merck KGaA's expense and Merck KGaA is responsible for all further manufacture of these ADC product candidates. Merck KGaA is required to pay its own costs in the development, commercialization and manufacture of these ADC product candidates and reimburses us for our costs incurred in performing our research activities under this agreement. The most advanced product candidates in this partnership are in the lead optimization stage.

Through March 31, 2017, we have received an upfront payment of $12 million and milestone payments of $2 million under this agreement. If products are successfully developed and commercialized against all six target antigens, we are entitled to receive future development, regulatory and commercial milestones of up to $778 million. We are entitled to receive tiered royalties in the low- to mid-single digit percentages on net sales of products targeting Merck KGaA's target antigens during the applicable royalty term if products are successfully developed and commercialized by Merck KGaA under this agreement.

Unless earlier terminated, this agreement will expire upon the expiration of the last royalty term for a product under the agreement in all countries or, if Merck KGaA does not designate any ADC product candidates produced by us under the agreement as preclinical development candidates, upon the expiration of the last-to-expire research program. The royalty term means, on a product-by-product and country-by-country basis, the period commencing upon the first commercial sale of a product and ending upon the later to occur of: (i) the expiration of the last Mersana patent right that covers or claims the exploitation of such product in such country, or (ii) 10 years from the date of first commercial sale of such

product in such country. Upon the expiration of each royalty term for each product on a country-by-country basis, Merck KGaA's exclusive license will convert to a perpetual, non-exclusive, royalty-free license with respect to such product in such country. Merck KGaA may terminate this agreement in its entirety or with respect to any target antigen for convenience upon 60 days' prior written notice. Each party may terminate this agreement in its entirety upon an uncured material breach of the agreement by the other party.

Strategic partnerships to access antibodies to progress our proprietary pipeline

Our focus is to progress our proprietary pipeline of Fleximer based ADCs. For this reason, we have partnered with biotechnology companies that have the capability to generate high quality antibodies or that have existing antibodies that we can license for inclusion in our ADCs. These strategic partnerships have facilitated the acceleration of our proprietary pipeline.

Adimab strategic partnership for the antibody in XMT-1522

In July 2012, we entered into a collaboration agreement with Adimab, LLC, or Adimab. We formed a strategic partnership with Adimab because we believe they have industry leading capabilities in antibody discovery, as evidenced by their existing partnerships with numerous significant pharmaceutical and biotechnology companies. The initial focus of this partnership was for the discovery of antibodies by Adimab directed to two targets, which would then be conjugated to our Dolaflexin platform technology. Our HER2-targeted antibody used in XMT-1522 was the result of this partnership. We exercised an option under this agreement to acquire Adimab's interest in this antibody and certain other antibodies developed under this partnership. Through exercising this option, we have also acquired Adimab's interests in patents and know-how arising from its work that were solely related to such antibodies and obtained a non-exclusive, worldwide license to Adimab's background technology to exploit ADCs containing these antibodies. Under the agreement, we are responsible for all development, manufacture and commercialization activities related to ADCs containing these antibodies, including XMT-1522, and we must use commercially reasonable efforts to develop or commercialize one such ADC or our rights to these antibodies will revert to Adimab. During 2014, we paid an option exercise fee of $1.5 million under this agreement and are obligated to pay Adimab up to $26.5 million in development and regulatory milestones for each product containing one of these antibodies and a low-single digit percentage royalty on net sales of each product during the applicable royalty term if this product is successfully developed and commercialized. The royalty term for XMT-1522 means, on a country-by-country basis, the period during which (i) the sale of XMT-1522 in the country of sale, or the manufacture of XMT-1522 in the country of manufacture, is covered by a licensed patent in such country or (ii) XMT-1522 has regulatory exclusivity granted by the FDA or any other regulatory authority in such country providing a period of marketing exclusivity or data exclusivity. During the first quarter of 2017, we made a milestone payment of $1.5 million to Adimab with respect to XMT-1522.

Recepta license for the antibody in XMT-1536

In July 2015, we entered into a license agreement with Recepta Biopharma S.A., or Recepta, a Brazilian biopharmaceutical company, licensing Recepta's NaPi2b antibody for use in XMT-1536 and granting Recepta the exclusive right to commercialize XMT-1536 in Brazil. Under this agreement, Recepta granted us an exclusive license and sub-license with respect to certain patents licensed by Recepta from Ludwig Institute for Cancer Research and technology owned by Recepta to develop and exploit products containing Recepta's NaPi2b antibody, including XMT-1536, worldwide for the diagnosis, prophylaxis or treatment of human cancer. We granted Recepta an exclusive license under our rights in such patents and technology and certain of our ADC-related patents and technology to commercialize any such products developed by

us, including XMT-1536, in Brazil. We are responsible for the worldwide development of products under this agreement at our own expense to develop and commercialize products in certain major markets, including at least one study site in our Phase 3 clinical studies in Brazil. Recepta may conduct development activities in Brazil at its own expense after providing us the opportunity to first conduct such activities at Recepta's expense. If a product is successfully developed and commercialized by Recepta in Brazil, we will use diligent efforts to enter into an agreement for the supply of such products to Recepta for sale in Brazil.

Under this agreement, we paid Recepta an upfront payment of $1 million during the year ended December 31, 2015 and are obligated to pay Recepta up to $65.5 million in development, regulatory and commercial milestones and tiered royalties in the low-single digit percentages on net sales of products outside of Brazil until the expiration of the royalty term if products are successfully developed and commercialized. We are entitled to receive tiered royalties in the low- to mid-single digit percentages on net sales of products in Brazil until the expiration of the royalty term if products are successfully developed and commercialized. The royalty term means, on a product-by-product and country-by-country basis, the period ending upon the later of (i) with respect to products commercialized by Mersana, the expiration of the last-to-expire Recepta patent that covers the product in such country (including the term of any applicable supplementary protection certificate) or with respect to products commercialized by Recepta, the expiration of the last-to-expire Mersana Patent that covers the product in Brazil (including the term of any applicable supplementary protection certificate) or (ii) 10 years from the date of first commercial sale of such product in such country. Upon the expiration of each royalty term in each country for each applicable product, the exclusive licenses granted to each party under the agreement will become fully-paid up and royalty-free. This agreement will remain in effect until otherwise terminated as set forth below. We may terminate this agreement for convenience in its entirety or on a country-by-country basis (except with respect to Brazil) or product-by-product basis upon 180 days' prior written notice for a termination in its entirety or upon 45 days' prior written notice for a termination in part. Each party may terminate this agreement in its entirety upon bankruptcy or similar proceedings of the other party, upon a patent challenge by the other party or upon an uncured material breach of the agreement by the other party. However, if such breach only relates to one country, the agreement may only be terminated with respect to such country.

Manufacturing

We do not own or operate and currently have no plans to establish any cGMP compliant manufacturing facilities. We currently rely, and expect to continue to rely, on external Contract Manufacturing Organizations, or CMOs, for the manufacture of product to support clinical testing. In the future, we expect to use CMOs to manufacture commercial supply of our products. The Dolaflexin manufacturing process involves readily available starting materials and uses unit operations that are well-precedented in the field of chemical/pharmaceutical production.

Government regulation

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, clinical and preclinical testing, manufacture, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing and import and export of pharmaceutical products. The processes for obtaining regulatory approvals in the United States and in foreign countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources. Failure to comply with the applicable requirements at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including imposition of a clinical hold, refusal to approve marketing applications, withdrawal of an approval, import/export delays, issuance of warning letters and other types of enforcement letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits or civil or criminal investigations and penalties.

Review and approval in the United States

In the United States, our ADC product candidates are subject to regulation by the FDA as biologics. The FDA regulates biologics under the Federal Food, Drug, and Cosmetic Act, or FDCA, the Public Health Service Act, or PHS Act, and associated implementing regulations. The failure to comply with the FDCA, the PHS Act and other applicable U.S. requirements at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including refusal by the FDA to approve pending applications, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters and other types of enforcement-related letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits or civil or criminal investigations and penalties brought by the FDA and the Department of Justice, or DOJ, or other governmental entities.

The steps before a biological product may be approved for marketing in the United States generally include:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA's GLP regulations;
- the submission to the FDA of an IND application which must take effect before human clinical studies may begin in the United States;
- approval by an independent IRB representing each clinical site before each clinical study may be initiated;
- performance of adequate and well-controlled clinical studies to establish the safety and efficacy of the proposed product for each indication, conducted in accordance with GCP;
- preparation and submission to the FDA of a BLA;
- FDA acceptance, review and approval of the BLA, which might include an Advisory Committee review;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with cGMP requirements

and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;

- satisfactory completion of any FDA audits of clinical study sites to assure compliance with GCPs and the integrity of the clinical data;
- payment of user fees, if any, for FDA review of the BLA; and
- compliance with any post-approval requirements, including REMS, where applicable, and post-approval studies required by the FDA as a condition of approval.

The testing and approval process requires substantial time, effort and financial resources, and the receipt and timing of any approval is uncertain.

Preclinical studies

Preclinical studies include laboratory evaluation of the product candidate, as well as *in vitro* and animal studies to assess the potential safety and efficacy of the product candidate for use in humans. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations. The results of the preclinical studies, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical studies, among other things, are submitted to the FDA as part of an IND. Additional preclinical testing, such as toxicity studies, may continue after the IND is submitted.

Clinical studies

Clinical studies involve the administration of the product candidate to human subjects under the supervision of qualified investigators in accordance with GCP requirements. GCP requirements include, among other things, conducting the study in accordance with a written protocol, obtaining informed consent from study subjects and approval and ongoing review of the study by an IRB at each site where the study will be conducted.

A protocol for each clinical study and any subsequent protocol amendments must be submitted to the FDA as part of the IND. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to a proposed clinical study or places the study on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical study can begin.

Clinical studies are typically conducted in three sequential phases prior to approval, which may overlap or be combined:

Phase 1: The product candidate is initially introduced into healthy human subjects or, in some cases, patients with the target disease (e.g., cancer) or condition. In Phase 1, the product candidate is typically tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness and to determine optimal dosage.

Phase 2: The product candidate is administered to a limited patient population to preliminarily evaluate the efficacy of the product for specific targeted diseases, to identify possible adverse effects and safety risks and to determine dosage tolerance and optimal dosage.

Phase 3: The product candidate is administered to an expanded patient population, generally at geographically dispersed clinical study sites, in well-controlled clinical studies to generate enough data to

statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product and to provide adequate information for the labeling of the product.

Phase 4 clinical studies may be conducted after initial marketing approval. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of products approved under accelerated approval regulations or when otherwise requested by the FDA in the form of post-market requirements or commitments.

Clinical studies at each phase of development may not be completed successfully within any specified period, or at all. Furthermore, the FDA, an IRB, the sponsor or the data monitoring committee, if applicable, may suspend or terminate a clinical study at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

Submission of a marketing application to the FDA

Assuming successful completion of required clinical testing and other requirements, the results of the preclinical studies and clinical studies, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications.

BLA pathway

Our ADC product candidates must be licensed via FDA approval of a BLA under Section 351 of the PHS Act on the basis of a demonstration that the product is safe, pure and potent. Once a BLA has been accepted for filing, the FDA's goal is to review BLAs within ten months of the filing date for standard review or six months of the filing date for priority review. The review process is often significantly extended by FDA requests for additional information or clarification. The FDA may refer the application to an advisory committee for review, evaluation and recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations.

Before approving the BLA, the FDA will inspect the facilities at which the biological product is manufactured and will not approve the product unless the facility is compliant with cGMPs. Additionally, the FDA will typically inspect one or more clinical study sites for compliance with GCP and integrity of the data supporting safety and efficacy.

During the approval process, the FDA also will determine whether to require post-approval testing, including Phase 4 clinical studies and surveillance programs to monitor the effect of approved biologics after they are commercialized. In addition, the FDA will determine whether the biologic will require a REMS to ensure that the benefits of the product outweigh its risks, which could include medication guides, physician communication plans or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools.

On the basis of the FDA's evaluation of the BLA and accompanying information, including the results of the inspection of the manufacturing facilities, the FDA will issue either an approval of the BLA or a Complete Response Letter, detailing the deficiencies in the submission and the additional testing or information required for reconsideration of the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

If the FDA approves a product, it may limit the approved indications for use for the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical studies, be conducted to further assess the product's safety after approval, require testing and surveillance programs to monitor the product after commercialization or impose other conditions, including a REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Fast track, breakthrough therapy and priority review designations

The FDA is authorized to designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs are fast track designation, breakthrough therapy designation and priority review designation.

First, the FDA may designate a product for "fast track" review if it is intended for the treatment of a serious or life-threatening disease or condition and it demonstrates the potential to address unmet medical needs for such disease or condition. For fast track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a fast track product's BLA before the application is complete. This "rolling review" is available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a fast track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees.

Second, the FDA may designate a product as a breakthrough therapy if it is intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints. The FDA may take certain actions with respect to breakthrough therapies, including holding meetings with the sponsor throughout the development process, providing timely advice to the product sponsor regarding development and approval, involving more senior staff in the review process, assigning a cross-disciplinary project lead for the review team and taking other steps to design the clinical studies in an efficient manner.

Third, the FDA may designate a product for priority review if it treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. A priority designation is intended to direct overall attention and resources to the evaluation of such applications and shortens the FDA's goal for taking action on a marketing application from ten months to six months from the filing date.

Accelerated approval pathway

The FDA may grant accelerated approval to a product for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments. A product eligible for accelerated approval may be approved on the basis of either a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large studies to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the product's clinical benefit. As a result, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical studies to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or to confirm a clinical benefit during post-marketing studies, would allow the FDA to withdraw the product from the market on an expedited basis. All promotional materials for product candidates approved under accelerated regulations are subject to prior review by the FDA.

Post-approval requirements

Products manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for certain supplemental applications.

In addition, manufacturers and other entities involved in the manufacture and distribution of approved products are required to register their establishments with the FDA and state agencies and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, imposition of post-market studies or clinical studies to assess new safety risks or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, suspension of the approval, complete withdrawal of the product from the market or product recalls;
- fines, warning or other enforcement-related letters or holds on post-approval clinical studies;

- refusal of the FDA to approve pending BLAs or supplements to approved BLAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Such products may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

Biosimilars and exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, signed into law on March 23, 2010, or the Health Care Reform Act, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, or the BPCIA, which created an abbreviated approval pathway for biological products shown to be biosimilar to, or interchangeable with, an FDA-licensed reference biological product. Biosimilarity requires a showing that the product is ''highly similar'' to the reference product notwithstanding minor differences in clinically inactive components and that there are no clinically meaningful differences between the biological product and the reference product in terms of safety, purity and potency. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products administered multiple times, the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. However, complexities associated with the larger, and often more complex, structure of biological products, as well as the process by which such products are manufactured, pose significant hurdles to implementation of the BPCIA that are still being worked out by the FDA.

A reference biologic is entitled to 12 years of exclusivity from the time of first licensure of the product. In addition, the first biological product submitted under the abbreviated approval pathway that is determined to be interchangeable with, not just biosimilar to, the reference product has exclusivity against other biologics submitting under the abbreviated approval pathway for the lesser of (i) one year after the first commercial marketing, (ii) 18 months after approval if there is no legal challenge, (iii) 18 months after the resolution in the applicant's favor of a lawsuit challenging the biologics' patents if an application has been submitted or (iv) 42 months after the application has been approved if a lawsuit is ongoing within the 42-month period.

Note that modifications to or repeal of all or certain provisions of the Health Care Reform Act are expected as a result of the outcome of the recent presidential election and Republicans maintaining control of Congress, consistent with statements made by Donald Trump and members of Congress during the presidential campaign and following the election. As noted above, the BPCIA was enacted as part of the Health Care Reform Act. Although there has been no direct discussion, to our knowledge, of repealing the BPCIA, if there is a repeal of all or parts of the Health Care Reform Act, this could impact the BPCIA provisions as well. We cannot predict the ultimate content, timing or effect of any changes to the Health Care Reform Act or any resulting impact of the BPCIA.

Pediatric studies and exclusivity

Under the Pediatric Research Equity Act of 2003, all applications for new active ingredients, new indications, new dosage forms, new dosing regimens or new routes of administration are required to contain an assessment of the safety and effectiveness of the product for the claimed indication in pediatric patients unless this requirement is waived, deferred or inapplicable.

Under the Best Pharmaceuticals for Children Act, a product may be eligible for pediatric exclusivity, which, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued written request for such a study.

Orphan drug designation and exclusivity

Under the Orphan Drug Act, the FDA may designate a product, including a biological product, as an "orphan drug" if it is intended to treat a rare disease that affects fewer than 200,000 individuals in the United States or, if it affects more than 200,000 individuals in the United States, a disease for which there is no reasonable expectation that the cost of developing and making the product for this type of disease or condition will be recovered from sales in the United States.

A product that receives the first FDA approval for a product for the indication for which it has orphan designation is entitled to orphan drug exclusivity, which means the FDA may not approve any other application to market the same product for the same indication for a period of seven years, except in limited circumstances, such as a showing of clinical superiority over the product with orphan exclusivity.

Patent term restoration

A patent claiming a new product may be eligible for a limited patent term extension under the Hatch-Waxman Amendments, which permits a patent restoration of up to five years for patent term lost during product development and the FDA regulatory review. The restoration period granted is typically one-half the time between the effective date of an IND and the submission date of a BLA, plus the time between the submission date of a BLA and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved drug product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. The USPTO, reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

Review and approval outside the United States

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries and jurisdictions governing, among other things, clinical studies, marketing authorization, commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we would need to obtain the necessary approvals by the comparable foreign regulatory authorities before we can commence clinical studies or marketing of the product in foreign countries and jurisdictions. Although many of the issues discussed above with respect to the United States apply similarly in the context of the European Union and other geographies, the approval process varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one

country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory process in others.

Pharmaceutical coverage, pricing and reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. Sales of pharmaceutical products depend in significant part on the availability and adequacy of third-party reimbursement. Third-party payors include government health administrative authorities, including authorities at the U.S. federal and state level, managed care providers, private health insurers and other organizations. Third-party payors are increasingly challenging the prices charged for, examining the medical necessity of and assessing the cost-effectiveness of medical products and services.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company 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. A payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Third-party reimbursement may not be sufficient to maintain price levels high enough to realize an appropriate return on investment in product development.

The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of drugs and biologics have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies, or so called health technology assessments, to obtain reimbursement or pricing approval. For example, the European Union provides options for its member states to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a product or may instead adopt a system of direct or indirect controls on the profitability of the company.

The downward pressure on healthcare costs in general, particularly prescription drugs and biologics, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert competitive pressure that may reduce pricing within a country. Any country that has price controls or reimbursement limitations for products may not allow favorable reimbursement and pricing arrangements.

Healthcare law and regulation

Our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors are and will be subject to various federal, state and foreign fraud and abuse laws and other healthcare laws and regulations. These laws and regulations may impact, among other things, our arrangements with third-party payors, healthcare professionals who participate in our clinical research programs, healthcare professionals and others who purchase, recommend or prescribe our approved products and our proposed sales, marketing, distribution and education programs. The federal and state healthcare laws and regulations that may affect our ability to operate include, without limitation, the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid;
- the federal False Claims Act, which imposes civil penalties, and provides for civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which 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, which prohibits 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 Physician Payments Sunshine Act, which require manufacturers of drugs, devices, biologics and medical supplies to report to the Centers for Medicare & Medicaid Services within the Department of Health and Human Services information related to payments and other transfers of value to physicians and teaching hospitals and physician ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

We will be required to spend substantial time and money to ensure that our business arrangements with third parties comply with applicable healthcare laws and regulations. Violations of these laws can subject us to criminal, civil and administrative sanctions including monetary penalties, damages, fines,

disgorgement, individual imprisonment and exclusion from participation in government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and reputational harm, we may be required to curtail or restructure our operations. Moreover, we expect that there will continue to be federal and state laws and regulations, proposed and implemented, that could impact our future operations and business.

Healthcare reform

Our revenue and operations could be affected by changes in healthcare spending and policy in the United States and elsewhere. We operate in a highly regulated industry and new laws, regulations or judicial decisions, or new interpretations of existing laws, regulations or decisions, related to healthcare availability, the method of delivery or payment for healthcare products and services could negatively impact our business, operations and financial condition. As noted above, the U.S. Congress, state legislatures and foreign regulators from time to time propose and adopt initiatives aimed at cost containment, which could impact our ability to sell our products profitably. For example, the Health Care Reform Act, substantially changed the way healthcare is financed by both governmental and private insurers. The law contains a number of provisions that affect coverage and reimbursement of drug products and/or that could potentially reduce the demand for our products such as:

- increasing rebates under state Medicaid programs for brand name prescription products and extending those rebates to Medicaid managed care;
- assessing a fee on manufacturers and importers of brand name prescription products reimbursed under certain government programs, including Medicare and Medicaid; and
- requiring manufacturers to provide a 50% discount on Medicare Part D brand name prescription products sold to Medicare beneficiaries whose prescription product costs cause the beneficiaries to be subject to the Medicare Part D coverage gap (i.e., the so-called ‘‘donut hole’’).

Modifications to or repeal of all or certain provisions of the Health Care Reform Act are expected as a result of the outcome of the recent presidential election and Republicans maintaining control of Congress, consistent with statements made by Donald Trump and members of Congress during the presidential campaign and following the election. We cannot predict the ultimate content, timing or effect of any changes to the Health Care Reform Act or other federal and state reform efforts. There is no assurance that federal or state healthcare reform will not adversely affect our business and financial results, and we cannot predict how future federal or state legislative, judicial or administrative changes relating to healthcare reform will affect our business.

In addition, other legislative changes have been proposed and adopted since the Health Care Reform Act was enacted. The Budget Control Act of 2011 includes provisions to reduce the federal deficit. The Budget Control Act, as amended, resulted in the imposition of 2% reductions in Medicare payments to providers which began in April, 2013 and will remain in effect through 2024 unless additional Congressional action is taken. Any significant spending reductions affecting Medicare, Medicaid or other publicly funded or subsidized health programs that may be implemented and/or any significant taxes or fees that may be imposed on us, as part of any broader deficit reduction effort or legislative replacement to the Budget Control Act, could have an adverse impact on our results of operations.

Additional regulation

In addition to the foregoing, state and federal laws regarding environmental protection and hazardous substances, including the Occupational Safety and Health Act, the Resource Conservation and Recovery Act and the Toxic Substances Control Act, affect our business. These and other laws govern the use, handling and disposal of various biologic, chemical and radioactive substances used in, and wastes generated by, operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. Equivalent laws have been adopted in foreign countries that impose similar obligations.

Intellectual property

We actively seek to protect the proprietary technology that we consider important to our business, including pursuing patents that cover our ADC platform, proprietary composition of matter, ADC product candidates and methods of using and manufacturing the same, as well as any other relevant inventions and improvements that are considered commercially important to the development of our business. We also rely on trade secrets, know-how and continuing technological innovation to develop and maintain our proprietary and intellectual property position.

Our commercial success will depend significantly on our ability to obtain and maintain patent and other proprietary protection for the technology, inventions and improvements we consider important to our business, defend our patents, preserve the confidentiality of our trade secrets and operate without infringing the patents and proprietary rights of third parties. Our policy is to seek to protect our proprietary and intellectual property position by, among other methods, filing U.S., international (under Patent Cooperation Treaty, or PCT) and foreign patent applications related to our proprietary technology, inventions and improvements that we consider are important to the development and implementation of our business.

The term of individual patents depends upon the legal term for patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier filed patent. The term of a patent that covers a drug or biological product may also be eligible for patent term extension when FDA approval is granted, provided statutory and regulatory requirements are met. In the future, if and when our drug candidates receive approval by the FDA or foreign regulatory authorities, we expect to apply for patent term extensions on issued patents covering those drugs, depending upon the length of the clinical studies for each drug and other factors. There can be no assurance that any of our pending patent applications will issue or that we will benefit from any patent term extension or favorable adjustments to the terms of any of our patents.

As with other biotechnology and pharmaceutical companies, our ability to maintain and solidify our proprietary and intellectual property position for our drug candidates and technologies will depend on our success in obtaining effective patent claims and enforcing those claims if granted. However, our pending patent applications, and any patent applications that we may in the future file or license from third parties, may not result in the issuance of patents. We also cannot predict the breadth of claims that may be allowed or enforced in our patents. Any issued patents that we may currently own or license or may receive in the future may be challenged, invalidated, circumvented or have the scope of their claims narrowed. For example, we cannot be certain of the priority of inventions covered by pending third-party

patent applications. If third parties prepare and file patent applications in the United States that also claim technology or therapeutics to which we have rights, we may have to participate in interference proceedings in the USPTO to determine priority of invention, which could result in substantial costs to us, even if the eventual outcome is favorable to us, which is highly unpredictable. In addition, because of the extensive time required for clinical development and regulatory review of a drug candidate we may develop, it is possible that, before any of our drug candidates can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby limiting the protection such patent would afford the respective product and any competitive advantage such patent may provide. For more information regarding the risks related to our intellectual property, please see "Risk factors—Risks related to our intellectual property."

As of May 31, 2017, we owned, in all of our patent portfolios, seven issued U.S. patents, 11 pending non-provisional U.S. patent applications (including two allowed U.S. applications), five pending provisional U.S. patent applications, seven foreign issued patents, two pending PCT applications and 77 foreign patent applications pending in a number of jurisdictions, including, but not limited to, Australia, Brazil, Canada, China, Europe, Eurasia, Gulf Cooperation Council, Hong Kong, Israel, India, Indonesia, Iran, Japan, Mexico, Macau, New Zealand, Russia, South Korea, South Africa and Taiwan. Our six issued U.S. patents covering our Fleximer ADC platform are projected to expire in 2032, and any patents that may issue from our pending U.S. applications would be projected to expire between 2032 and 2037, in each case, excluding any additional term for patent term adjustments or patent term extensions. In addition, we have exclusively in-licensed two issued U.S. patents, one pending U.S. patent application and one issued European patent for the NaPi2b antibody from Recepta. These in-licensed issued U.S. and foreign patents are projected to expire in 2029, excluding any additional term for patent term adjustments or patent term extensions. We have so far not filed for patent protection in all national and regional jurisdictions where such protection may be available. In addition, we may decide to abandon national and regional patent applications before they are granted. Finally, the grant proceeding of each national or regional patent is an independent proceeding which may lead to situations in which applications might in some jurisdictions be refused by the relevant registration authorities, while granted by others. It is also quite common that depending on the country, various scopes of patent protection may be granted on the same product candidate or technology.

The intellectual property portfolio of our ADC platform, our ADC product candidates and components thereof are summarized below. Some of these portfolios are in very early stages and, with respect to most of the pending patent applications prosecution has yet to commence. Prosecution is a lengthy process, during which the scope of the claims initially submitted for examination by the USPTO may be narrowed (sometimes significantly) by the time they issue, if they issue at all. We expect this to be the case with respect to our pending patent applications referred to below.

Fleximer ADC platform

The intellectual property portfolio for our Fleximer ADC platform is directed to compositions of matter for the Fleximer ADCs, as well as methods of using and making these novel conjugates, compositions of matter for Fleximer drug conjugates prior to conjugation with the antibody or antibody fragment and methods of making the same and compositions of matter for our proprietary auristatin compounds (and by extension our proprietary DolaLock feature) and conjugates thereof (e.g., to Fleximer and/or an antibody or antibody fragment). As of May 31, 2017, we owned six issued U.S. patents, two pending U.S. patent applications (including one allowed U.S. application), seven issued foreign patents and 20 pending foreign patent applications in a number of jurisdictions, including Australia, Brazil, Canada, China, Europe, Hong Kong, Israel, India, Japan, Macau, Mexico, Russia, South Korea, and Taiwan. Any U.S. or ex-U.S. issued patents or

patents issuing from the pending applications covering the Fleximer ADC platform are projected to expire in June 2032, excluding any additional term for patent term adjustments or patent term extensions.

Dolaflexin ADC platform

The intellectual property portfolio for our Dolaflexin ADC platform is directed to compositions of matter for the Dolaflexin ADCs, as well as methods of using and making these novel conjugates, compositions of matter for Dolaflexin drug conjugates prior to conjugation with the antibody or antibody fragment and methods of making the same. As of May 31, 2017, we owned one pending U.S. patent application and 13 pending foreign patent applications in a number of ex-U.S. jurisdictions, including Australia, Brazil, Canada, China, Eurasia, Europe, Israel, India, Japan, South Korea, Mexico and South Africa. Any U.S. or ex-U.S. patent issuing from the pending applications covering Dolaflexin ADC platform are projected to expire in October 2034, excluding any additional term for patent term adjustments or patent term extensions.

XMT-1522 ADC

The intellectual property portfolio for our HER2 ADC product candidate, XMT-1522, is directed to compositions of matter for our novel HER2 antibody or fragment thereof and conjugates thereof (including XMT-1522) based on our Dolaflexin platform, as well as methods of using and making these novel conjugates. This intellectual property portfolio covering the novel HER2 antibody or fragment thereof is assigned to us from Adimab. As of May 31, 2017, we owned one issued U.S. patent, one allowed U.S. application and 37 pending foreign patent applications in a number of jurisdictions, including Algeria, African Regional Intellectual Property Organization, or the ARIPO, Argentina, Australia, Brazil, Canada, Chile, China, Columbia, Costa Rica, Dominican Republic, Ecuador, Egypt, Eurasia, Europe, Georgia, Gulf Cooperation Council, Israel, India, Indonesia, Iran, Japan, Pakistan, South Korea, Malaysia, Mexico, New Zealand, Peru, Philippines, Singapore, South Africa, Thailand, Taiwan, Tunisia, Ukraine, Uzbekistan and Vietnam. Any U.S. or ex-U.S. patent issuing from the pending applications covering XMT-1522 ADC platform are projected to expire in June 2035, excluding any additional term for patent term adjustments or patent term extensions.

XMT-1536 ADC

The intellectual property portfolio for our NaPi2b ADC product candidate, XMT-1536, is directed to compositions of matter for our novel ADC based on exclusively in-licensed NaPi2b antibody and our Dolaflexin platform, as well as methods of using and making these novel conjugates. As of May 31, 2017, we owned one pending U.S. application, four foreign patent applications and one pending PCT application directed to the composition of matter for XMT-1536, and methods of using and making same. We also intend to enter the PCT application in ex-U.S. jurisdictions, including Australia, Brazil, Canada, China, Eurasia, Europe, Israel, India, Japan, South Korea, Mexico and South Africa. Any U.S. or ex-U.S. patent issuing from the pending applications covering XMT-1536 are projected to expire in March 2037, excluding any additional term for patent term adjustments or patent term extensions.

We have in-licensed two issued U.S. patents, one allowed U.S. patent application and one issued European patent for the novel NaPi2b antibody from Recepta, which Recepta licensed from Ludwig Institute for Cancer Research. These in-licensed issued U.S. and European patents are projected to expire in 2029, excluding any additional term for patent term adjustments or patent term extensions. Recepta still owns one pending Brazilian patent application for the NaPi2b antibody, which is not licensed to us. A patent based on this Brazilian patent application is projected to expire in 2029.

In addition to patents, we rely upon unpatented trade secrets and know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary

information, in part, by executing confidentiality agreements with our collaborators and scientific advisors and non-competition, non-solicitation, confidentiality and invention assignment agreements with our employees and consultants. We have also executed agreements requiring assignment of inventions with selected scientific advisors and collaborators. The confidentiality agreements we enter into are designed to protect our proprietary information and the agreements or clauses requiring assignment of inventions to us are designed to grant us ownership of technologies that are developed through our relationship with the respective counterparty. We cannot guarantee, however, that we will have executed such agreements with all applicable employees and contractors, or that these agreements will afford us adequate protection of our intellectual property and proprietary information rights. With respect to the building of our proprietary compound library, we consider trade secrets and know-how to be our primary intellectual property. Trade secrets and know-how can be difficult to protect. In particular, we anticipate that with respect to this technology platform, these trade secrets and know-how will over time be disseminated within the industry through independent development and public presentations describing the methodology. For more information regarding the risks associated with our trade secrets, please see "Risk factors—Risks related to our intellectual property—Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information."

Competition

The biotechnology and biopharmaceutical industries, and the oncology subsector, are characterized by rapid evolution of technologies, fierce competition and strong defense of intellectual property. Any product candidates that we successfully develop and commercialize will have to compete with existing therapies and new therapies that may become available in the future. While we believe that our proprietary ADC platform and scientific expertise provide us with competitive advantages, a wide variety of institutions, including large biopharmaceutical companies, specialty biotechnology companies, academic research departments and public and private research institutions, are actively developing potentially competitive products and technologies. These competitors generally fall within the following categories:

New cancer treatments: Many global pharmaceutical companies, as well as medium and small biotechnology companies, are pursuing new cancer treatments whether small molecules, biologics or ADCs. Any of these treatments could prove to be superior clinically to our products.

ADC platforms: Although Dolaflexin and the new platform initiatives we have underway are highly differentiated and proprietary, many companies continue to invest in innovation in the ADC field including new payload classes, new conjugation approaches and new targeting moieties. Any of these initiatives could lead to a platform that has superior properties to ours. We are aware of multiple companies with ADC technologies that may be competitive to our ADC platforms, including Astellas, AstraZeneca, Bristol-Myers Squibb, Daiichi Sankyo, ImmunoGen, Immunomedics, Pfizer and Seattle Genetics. These companies or their partners, including AbbVie, Genentech, Lilly, Novartis, Sanofi and Takeda, may develop ADCs based on these ADC technologies which compete in the same indications as our current and future ADC product candidates. We expect to compete on improved efficacy, safety and tolerability compared to other ADCs and if our products are not demonstrably superior in these respects compared to other approved therapeutics, we may not be able to compete effectively.

One of the two currently approved and broadly available ADC therapies in the United States, ado-trastuzumab emtansine marketed by Genentech, is a HER2-targeted ADC approved for use in HER2-positive patients and, even though we are developing, and expect to get approval for, XMT-1522 for lower expressing HER2 patients, ado-trastuzumab emtansine may compete with our HER2-targeted ADC,

XMT-1522, if XMT-1522 is approved. In addition, other companies are exploring treatments for patients with low HER2 expression, or may do so in the future.

Many of our competitors, either alone or with strategic partners, have substantially greater financial, technical and human resources than we do. Accordingly, our competitors may be more successful than us in obtaining approval for treatments and achieving widespread market acceptance, rendering our treatments obsolete or non-competitive. Accelerated merger and acquisition activity in the biotechnology and biopharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical study sites and patient registration for clinical studies and acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Our commercial opportunity could be substantially limited in the event that our competitors develop and commercialize products that are more effective, safer, less toxic, more convenient or less expensive than our comparable products. In geographies that are critical to our commercial success, competitors may also obtain regulatory approvals before us, resulting in our competitors building a strong market position in advance of our products' entry. We believe the factors determining the success of our programs will be the efficacy, safety and tolerability of our product candidates

Employees

As of May 31, 2017, we had 68 full time employees, including 55 with M.D., Ph.D. or other advanced degrees. Of these full time employees, 57 are engaged in research and development and 11 are engaged in general and administrative activities. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Facilities

We occupy approximately 34,000 square feet of office and laboratory space in Cambridge, MA under a lease that expires in early 2019. We expect that this space will be sufficient to cover our needs until the lease expires.

Legal proceedings

From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, as of the date of this prospectus, we do not believe we are party to any claim or litigation, the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Management

Executive officers and directors

The following table sets forth information regarding our executive officers and directors as of the date hereof:

Name	Age	Position(s)
Executive Officers:		
Anna Protopapas	52	President, Chief Executive Officer and Director
Eva M. Jack	49	Chief Business Officer
Donald A. Bergstrom, M.D., Ph.D.	45	Chief Medical Officer
Timothy B. Lowinger, Ph.D.	53	Chief Scientific Officer
Michael Kaufman, Ph. D.	59	Senior Vice President of Chemistry, Manufacturing and Controls
Directors:		
David Mott(2)(3)	51	Chairman
Elaine V. Jones, Ph.D.(1)(3)	62	Director
Sara Nayeem, M.D.(1)	39	Director
Kristen Hege, M.D.(2)	54	Director
Andrew A. F. Hack, M.D., Ph.D.(1)	43	Director

(1) Member of the audit committee.

(2) Member of the compensation committee.

(3) Member of the nominating and corporate governance committee.

Executive officers

Anna Protopapas has served as our President and Chief Executive Officer and as a director since March 2015. Prior to joining Mersana, from October 2010 to October 2014, Ms. Protopapas served as a member of the Executive Committee of Takeda Pharmaceutical Company Limited, a global pharmaceutical company, and held various senior management positions at the company, including serving as President of Millennium Pharmaceuticals, a wholly owned subsidiary of Takeda focused on oncology, where she was responsible for leading Takeda's oncology business, and Executive Vice President of Global Business Development, where she was responsible for global acquisitions, partnering, licensing and venture investing. From October 1997 to October 2010, Ms. Protopapas served in various positions at Millennium Pharmaceuticals, including as the Senior Vice President of Strategy and Business Development and a member of the Executive Committee, where she led the company's business development initiatives. Ms. Protopapas has served on the board of directors of Bioverativ since February 2017. Previously she served on the board of directors for Ariad Pharmaceuticals from May 2015 until the sale of the company in January 2017 and served as the Chair of the Compensation Committee beginning in February 2016. She received a bachelor's degree in science and engineering from Princeton University, a master's in chemical engineering practice from the Massachusetts Institute of Technology and an M.B.A. from Stanford Graduate School of Business. We believe that Ms. Protopapas is qualified to serve as a member of our board based on her experience in the pharmaceutical industry as well as her insight into our business as President and Chief Executive Officer of our company.

Eva M. Jack has served as our Chief Business Officer since November 2013. Previously, from 2012 to 2013, she served as a consultant to various biotech companies and investors on business and financing

strategies. Before that, she served as Chief Business Officer of Pulmatrix from 2010 to 2012. Before Pulmatrix, she spent six years at MedImmune, the worldwide biologics unit of AstraZeneca, as Managing Director of MedImmune Ventures, overseeing investments in private biotechnology companies, and as a Director in MedImmune's Business Development group. Earlier in her career, Ms. Jack held a variety of positions at Intel Corp. Ms. Jack received a B.A. from the University of Virginia and a master's in health sciences from The Johns Hopkins University.

Donald A. Bergstrom, M.D., Ph.D. has served as our Chief Medical Officer since January 2014. Previously, from 2010 to 2014, Dr. Bergstrom served as Associate Vice President and Global Head of Translational and Experimental Medicine at Sanofi Oncology. Before Sanofi, Dr. Bergstrom spent six years at Merck Research Labs, serving in various roles within the Clinical Molecular Profiling, Oncology Clinical Research and Experimental Medicine Oncology groups. Dr. Bergstrom received a B.A. from The Johns Hopkins University and an M.D. and a Ph.D. in Pathology from the University of Washington.

Timothy B. Lowinger, Ph.D. has served as our Chief Scientific Officer since February 2008. Previously, Dr. Lowinger worked at Bayer Pharmaceuticals in the United States, Japan and Germany. He received a B.Sc. (Hons.) in Chemistry and a Ph.D. in Synthetic Organic Chemistry from the University of British Columbia and was a Merck Postdoctoral Fellow at the Ohio State University. He currently serves on the scientific advisory board of Keystone Symposia.

Michael Kaufman, Ph.D. has served as our Senior Vice President of Chemistry, Manufacturing and Controls since February 2016. Previously, from 2012 to 2016, Dr. Kaufman served as Vice President, Technical Development at Biogen, Inc. Before Biogen, Dr. Kaufman spent 10 years at Millennium Pharmaceuticals, most recently as Vice President, Pharmaceutical Sciences. Before that, he spent 15 years at Merck and Co., Inc. serving in various roles. Dr. Kaufman received a B.S. in Chemistry from the State University of New York, Stony Brook and a Ph.D. in Physical Organic Chemistry from the University of California, Berkeley.

Non-management directors

David Mott has served as Chairman of our board of directors since July 2012. Since 2008, Mr. Mott has served as a general partner of New Enterprise Associates, an investment firm focused on venture capital and growth equity investments, where he leads the healthcare investing practice. Previously, from 1992 until 2008, Mr. Mott worked at MedImmune Limited, a biotechnology company and subsidiary of AstraZeneca Plc, serving in numerous roles during his tenure including president and chief executive officer from October 2000 to July 2008, and previously as chief financial officer, and as president and chief operating officer. During that time, Mr. Mott also served as executive vice president of AstraZeneca Plc from June 2007 to July 2008 following AstraZeneca Plc's acquisition of MedImmune Limited in June 2007. Prior to joining MedImmune Limited, Mr. Mott was a vice president in the healthcare investment banking group at Smith Barney, Harris Upham & Co. Inc. Mr. Mott serves as the chairman of the board of directors for Adaptimmune Therapeutics plc, Ardelyx, Inc., Epizyme, Inc. and Tesaro, Inc. He also serves on the boards of directors of several privately held life sciences companies, including: 3-V Biosciences, Clementia, Cydan, Imara, Mersana, NightstaRx, Vtesse and Xtuit. Mr. Mott received a B.A. from Dartmouth College. We believe that Mr. Mott's leadership experience in the biotechnology industry, including his role as chief executive officer of MedImmune, as well as his venture capital experience, especially his experience investing in life sciences companies, and his financial experience, provide him with the qualifications and skills to serve as director.

Elaine V. Jones, Ph.D. has served as a member of our board of directors since February 2015. Since 2008, Dr. Jones has served as Vice President, Venture Capital at Pfizer Venture Investments, where she is

responsible for making and managing venture investments of strategic interest to Pfizer Inc. Prior to joining Pfizer, Dr. Jones was a General Partner with EuclidSR Partners. She began her private equity career in 1999 at S.R. One, GlaxoSmithKline's venture fund. Before that, she was Director of Scientific Licensing for SmithKline Beecham and a research scientist in SmithKline Beecham Pharmaceutical R&D. Dr. Jones currently serves on the board of directors for various privately held companies, including: Autifony Therapeutics, Blade Therapeutics, MISSION Therapeutics, Nimbus Therapeutics, Quartet Medicine, Second Genome and Storm Therapeutics. She also serves as a director at Juniata College, sitting on its marketing and investments committees. Dr. Jones previously served on the boards of directors of currently publically traded healthcare companies, including: Aquinox Pharmaceuticals, from June 2010 to January 2015, Flexion Therapeutics, from December 2009 to June 2014, MIRNA Therapeutics, from December 2012 to June 2016, and CytomX Therapeutics, from December 2014 to June 2016. Dr. Jones received a B.S. from Juniata College and a Ph.D. in Microbiology from the University of Pittsburgh. We believe that Dr. Jones' strong scientific and pharmaceutical industry background, as well as her experience in the venture capital industry, qualify her to serve as a member of our board of directors.

Sara Nayeem, M.D. has served as a member of our board of directors since July 2012. Dr. Nayeem joined New Enterprise Associates' healthcare team in 2009, and has served as a partner since 2015, focusing on investments in biopharmaceutical companies. She currently serves on the boards of several privately held life sciences companies, including: Mersana, Cydan, Vtesse and Imara, and as a board observer for Clementia, Millendo and NightstaRx. She previously served as a board observer for Tesaro, Inc., Ziarco Group Limited (acquired by Novartis), Loxo Oncology, Inc., Omthera Pharmaceuticals (acquired by AstraZeneca), Epizyme, Inc. and Zyngenia Inc. She has also been involved in New Enterprise Associates' investments in Prosensa Holding NV (acquired by BioMarin), Proteostasis Therapeutics, Inc., 3-V Biosciences, XTuit and Edimer. She also serves on the board of BioHealth Innovation Management. Prior to joining New Enterprise Associates, Dr. Nayeem was an Associate with Merrill Lynch's Global Healthcare Group, where she advised biotechnology, pharmaceutical and medical device companies on numerous mergers, acquisitions and financing transactions. Previously, she worked as an Investment Banking Analyst at Morgan Stanley. She has conducted basic science research in mammalian cardiac development and clinical research in age-related macular degeneration. Dr. Nayeem concurrently earned an M.D. *cum laude* and an M.B.A. from Yale University, where she was a Yale MBA Scholar. She received an A.B. *magna cum laude* in Biology from Harvard University. We believe that Dr. Nayeem's experience in the venture capital industry, especially her experience investing in biopharmaceutical companies, as well as her medical background, provide her with the qualifications and skills to serve as director.

Kristen Hege, M.D. has served as a member of our board of directors since August 2016. Dr. Hege was hired in 2010 as Vice President, Translational Development, and is currently a Corporate VP Translational Development at Celgene Corporation. She has also held an active faculty position at the University of California, San Francisco Medical Center since 1996, most recently as Clinical Professor of Medicine, Hematology/Oncology, serving in that role as a volunteer since 2008. Prior to Celgene, she served as Chief Medical Officer at Cellerant Therapeutics and Acting Chief Medical Officer at Aragon Pharmaceuticals and Theraclone Sciences. Dr. Hege was also a Vice President, Clinical Research and Development at Cell Genesys. Dr. Hege is a volunteer at-large director for the Society for Immunotherapy of Cancer and observing board member at Arcus Biosciences. Dr. Hege previously served on the boards of directors for BayBio/California Life Sciences Association from 2014 to 2016 and as a volunteer for Flexus Biosciences from 2014 to 2015 as a board observer. Dr. Hege received a B.A. in Biochemistry from Dartmouth College *summa cum laude*, an M.D. from University of California, San Francisco and Board certification in Hematology and Medical Oncology from the University of California, San Francisco. We believe that

Dr. Hege's medical background and experience in the biotechnology industry qualify her to serve as a director.

Andrew A. F. Hack, M.D., Ph.D. has served as a member of our board of directors since January 2017. Since July 2015, Dr. Hack has served as Chief Financial Officer of Editas Medicine. Previously, from 2011 until 2015, he served as a portfolio manager at Millennium Management, where he ran a healthcare fund focused on biotechnology, pharmaceutical and medical device companies. Before Millennium Management, Dr. Hack was an analyst at HealthCor Management from 2008 to 2011. Prior to HealthCor Management, Dr. Hack served as an analyst at Carlyle-Blue Wave Partners and a principal of the MPM BioEquities Fund. Dr. Hack started his investment career at Banc of America Securities, covering the biotechnology sector. He was also a co-founder of Reify Corporation, a life science tools and drug discovery company. Dr. Hack received a B.A. in Biology, an M.D. and a Ph.D. all from the University of Chicago. We believe that Dr. Hack's financial background, as well as his experience in the biotechnology sector and his medical background, qualify him to serve as a member of our board of directors.

Board composition

As of the date hereof, our board of directors consisted of six members. The members of our board of directors were elected in compliance with the provisions of the voting agreement among us and our major stockholders. The voting agreement will terminate upon the closing of this offering and we will have no further contractual obligations regarding the election of our directors. See ''Certain relationships and related party transactions.'' Our directors hold office until their successors have been elected and qualified or until their earlier death, resignation or removal. There are no family relationships among any of our directors or executive officers.

Director independence. Our board of directors currently consists of six members. Our board of directors has determined that each of our directors, other than Ms. Protopapas, our President and Chief Executive Officer, are independent directors, including for purposes of the rules of The NASDAQ Stock Market and relevant federal securities laws and regulations. The NASDAQ Stock Market independence definition includes a series of objective tests, including that a director is not, and has not been for at least three years, one of our employees and that neither a director nor any of his family members has engaged in various types of business dealings with us. In addition, as required by The NASDAQ Stock Market rules, our board of directors has made a subjective determination as to each independent director that no relationships exist, which, in the opinion of our board of directors, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In making these determinations, our board of directors reviewed and discussed information provided by the directors and us with regard to each director's business and personal activities and relationships as they may relate to us and our management. There are no family relationships among any of our directors or executive officers

Staggered board.

Our amended and restated certificate of incorporation will provide that our board of directors will be divided into three classes of directors, with the classes as nearly equal in number as possible. Upon completion of this offering, each of these classes will be comprised of the following directors:

- Our Class I directors will be Dr. Jones and Dr. Nayeem;
- Our Class II directors will be Dr. Hack and Dr. Hege; and
- Our Class III directors will be Mr. Mott and Ms. Protopapas.

Subject to any earlier resignation or removal in accordance with the terms of our amended and restated certificate of incorporation and amended and restated by-laws that we expect to be in effect upon the closing of this offering, our Class I directors will serve until the first annual meeting of stockholders following the completion of this offering; our Class II directors will serve until the second annual meeting of stockholders following the completion of this offering; and our Class III directors will serve until the third annual meeting of stockholders following the completion of this offering.

Our amended and restated certificate of incorporation will provide that the number of our directors shall be fixed from time to time by a resolution of our board of directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class shall consist of one third of the board of directors.

Board committees

Upon the completion of this offering, our board of directors will have three standing committees: an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter to be adopted by our board of directors.

Audit committee

Effective upon completion of this offering, our audit committee will be comprised of Dr. Hack, Dr. Jones and Dr. Nayeem, with Dr. Hack serving as chairman of the committee. Our board of directors has determined that each member of the audit committee meets the independence requirements of Rule 10A-3 under the Exchange Act and the applicable rules of The NASDAQ Stock Market. Our board of directors has determined that Dr. Hack is an ''audit committee financial expert'' within the meaning of the SEC regulations. The audit committee's responsibilities upon completion of this offering will include:

- appointing, approving the compensation of, and assessing the qualifications, performance and independence of our independent registered public accounting firm;
- pre-approving audit and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm;
- reviewing and discussing with management and the independent registered public accounting firm our annual and quarterly financial statements and related disclosures as well as critical accounting policies and practices used by us;
- setting policies for our hiring of employees or former employees of our independent registered public accounting firm;
- reviewing our significant risks or exposures and assessing the steps that management has taken or should take to monitor and minimize such risks or exposures;
- reviewing the adequacy of our internal control over financial reporting, including information system controls and security;
- establishing policies and procedures for the receipt and retention of accounting-related complaints and concerns;
- recommending, based upon the audit committee's review and discussions with management and the independent registered public accounting firm, whether our audited financial statements shall be included in our Annual Report on Form 10-K;

- monitoring our compliance with legal and regulatory requirements as they relate to our financial statements and accounting matters;
- preparing the audit committee report required by the rules of the SEC to be included in our annual proxy statement;
- reviewing all related party transactions for potential conflict of interest situations and approving all such transactions; and
- reviewing and discussing with management and our independent registered public accounting firm our earnings releases and scripts.

Compensation committee

Effective upon completion of this offering, our compensation committee will be composed of Mr. Mott and Dr. Hege, with Mr. Mott serving as chairman of the committee. Our board of directors has determined that each member of the compensation committee is "independent" as defined under the applicable listing standards of The NASDAQ Stock Market. The compensation committee's responsibilities upon completion of this offering will include:

- reviewing and approving corporate goals and objectives relevant to the compensation of our chief executive officer, the officers of the Company who report directly to the chief executive officer and all officers who are "insiders" subject to Section 16 of the Exchange Act;
- evaluating the performance of our chief executive officer and such other officers in light of such corporate goals and objectives and determining and approving, or recommending to our board of directors for approval, the compensation of our chief executive officer and such other officers;
- appointing, compensating and overseeing the work of any compensation consultant, legal counsel or other advisor retained by the compensation committee;
- conducting the independence assessment outlined in the listing standards of The NASDAQ Stock Market with respect to any compensation consultant, legal counsel or other advisor retained by the compensation committee;
- annually reviewing and reassessing the adequacy of the committee charter;
- reviewing and establishing our overall management compensation, and our compensation philosophy and policy;
- overseeing and administering our equity compensation and other compensatory plans;
- reviewing and approving our equity and incentive policies and procedures for the grant of equity-based awards and approving the grant of such equity-based awards;
- reviewing and making recommendations to our board of directors with respect to non-employee director compensation; and
- producing a report, if required, on executive compensation to be included in our annual proxy statement or Annual Report on Form 10-K.

Nominating and corporate governance committee

Effective upon completion of this offering, our nominating and corporate governance committee will be composed of Dr. Jones and Mr. Mott, with Dr. Jones serving as chairman of the committee. Our board of directors has determined that each member of the nominating and corporate governance committee is "independent" as defined in the applicable rules of The NASDAQ Stock Market. The nominating and corporate governance committee's responsibilities upon completion of this offering will include:

- establishing procedures for identifying and evaluating board of director candidates, including nominees recommended by stockholders;
- identifying individuals qualified to become members of our board of directors;
- recommending to our board of directors the persons to be nominated for election as directors and to each of our board's committees;
- developing and recommending to our board of directors a set of corporate governance principles;
- articulating to each director what is expected, including reference to the corporate governance principles and directors' duties and responsibilities;
- reviewing and recommending to our board of directors practices and policies with respect to directors;
- reviewing and recommending to our board of directors the functions, duties and compositions of the committees of our board of directors;
- reviewing and assessing the adequacy of the committee charter and submitting any changes to our board of directors for approval;
- considering and reporting to our board of directors any questions of possible conflicts of interest of board of directors members;
- providing for new director orientation and continuing education for existing directors on a periodic basis;
- performing an evaluation of the performance of the committee; and
- overseeing the evaluation of our board of directors.

Our board of directors may establish other committees from time to time.

Compensation committee interlocks and insider participation

None of the members of our compensation committee has at any time during the prior three years been one of our officers or employees. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our board of directors or compensation committee. For a description of transactions between us and members of our compensation committee and affiliates of such members, please see "Certain relationships and related party transactions."

Code of business conduct and ethics

We plan to adopt a code of business conduct and ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting, which will be effective upon completion of this offering. Upon the completion of this offering, our code of business conduct and ethics will be available on our website at www.mersana.com. We intend to disclose any amendments to the code, or any waivers of its requirements, on our website or in a Current Report on Form 8-K.

Executive and director compensation

Introduction

This section provides an overview of the compensation awarded to, earned by, or paid to our principal executive officer and our next two most highly—compensated executive officers in respect of their service to the Company for our fiscal year ended December 31, 2016. We refer to these individuals as our named executive officers. Our named executive officers are:

- Anna Protopapas, our Chief Executive Officer and President;
- Donald A. Bergstrom, M.D., Ph.D., our Senior Vice President and Chief Medical Officer; and
- Timothy B. Lowinger, Ph.D., our Senior Vice President and Chief Scientific Officer.

Summary compensation table

The following table sets forth the compensation awarded to, earned by, or paid to our named executive officers in respect of their service to the Company for the fiscal year ended December 31, 2016.

Name and principal position	Year	Salary ($)	Bonus ($)(1)	Option awards ($)(2)	All other compensation ($)(3)	Total ($)
Anna Protopapas *Chief Executive Officer and President*	2016	415,000	181,770	414,884	3,000	1,014,654
Donald A. Bergstrom, M.D., Ph.D. *Senior Vice President and Chief Medical Officer*	2016	357,127	135,463	202,279	—	694,869
Timothy B. Lowinger, Ph.D. *Senior Vice President and Chief Scientific Officer*	2016	357,127	135,463	119,680	3,000	615,270

(1) Amounts represent the discretionary annual cash bonuses paid to our named executive officers for 2016.

(2) Amounts represent the aggregate grant date fair value of stock option awards granted to our named executive officers in 2016, computed in accordance with FASB ASC Topic 718 and excluding the effect of estimated forfeitures. The assumptions used in the valuation of these option awards are set forth in Note 9 to our financial statements included in this prospectus on page F-34.

(3) Amounts represent 401(k) plan matching contributions for 2016.

Narrative disclosure to summary compensation table

Employment arrangements with our named executive officers

We have entered into an amended and restated letter agreement with each of our named executive officers setting forth the terms and conditions of their employment with us. Each such letter agreement provides for "at will" employment with us. Each of our named executive officers is also a party to our standard nondisclosure, noncompetition and assignment of intellectual property agreement. The material terms of the amended and restated letter agreements with our named executive officers are described below. The terms "cause," "good reason" and "change in control" referred to below are defined in each named executive officer's amended and restated letter agreement.

Ms. Protopapas. We entered into an amended and restated letter agreement with Ms. Protopapas on March 17, 2017 that provides for a base salary of $430,148 per year, subject to potential discretionary

merit increases, and a discretionary annual performance bonus with a target of 40% of her annual base salary.

Drs. Bergstrom and Lowinger. We entered into an amended and restated letter agreement with each of Drs. Bergstrom and Lowinger on March 8, 2017 that provides for a base salary of $370,162 per year, subject to potential discretionary merit increases, and a discretionary annual performance bonus with a target of 35% of the executive's annual base salary.

Termination of Employment without Cause or for Good Reason. If the executive's employment is terminated by us without cause or by the executive for good reason, the executive will be entitled to receive continued payment of his or her base salary for 12 months, in the case of Ms. Protopapas, or 9 months, in the case of Drs. Bergstrom and Lowinger, following such termination of employment. In addition, if the executive elects to continue coverage in our group health plans, we will pay a portion of the COBRA or state law premiums, equal to the excess of the cost of such premiums over the amount the executive would have paid for coverage for the executive, his or her spouse and dependents had the executive remained employed by the Company, for 12 months, in the case of Ms. Protopapas, or 9 months, in the case of Drs. Bergstrom and Lowinger.

Termination of Employment without Cause or for Good Reason following a Change in Control. If the executive's employment is terminated by us without cause or by the executive for good reason, in either case, within 12 months following a change in control, the executive will be entitled to receive a lump sum payment equal to the sum of (i) 18 months' of base salary, in the case of Ms. Protopapas, or 12 months' of base salary, in the case of Drs. Bergstrom and Lowinger, and (ii) the executive's target annual bonus, multiplied by 1.5, in the case of Ms. Protopapas, or one, in the case of Drs. Bergstrom and Lowinger. If the executive elects to continue coverage in our group health plans, we will pay a portion of the COBRA or state law premiums, equal to the excess of the cost of such premiums over the amount the executive would have paid for coverage for the executive, his or her spouse and dependents had the executive remained employed by the Company, for 18 months, in the case of Ms. Protopapas, or 12 months, in the case of Drs. Bergstrom and Lowinger. In addition, any stock options or other equity-based awards held by the executive, to the extent outstanding immediately prior to such termination of employment, will vest in full as of immediately prior to such termination.

Severance subject to release of claims and continued compliance with restrictive covenants. Our obligation to provide an executive with severance payments and other benefits under the executive's amended and restated letter agreement is conditioned on the executive signing (and not subsequently revoking) an effective release of claims in favor of the company and the executive's continued compliance with the nondisclosure, noncompetition and assignment of intellectual property agreement.

Section 280G. In the event that all or any portion of the payments or benefits provided under an executive's amended and restated letter agreement would constitute an ''excess parachute payment'' within the meaning of Section 280G of the Code, the executive will be entitled to receive an amount equal to the greater of (i) the amount of such payments or benefits reduced so that no portion of the payments and benefits would fail to be deductible under Section 280G of the Code, or (ii) the amount otherwise payable reduced by all taxes, including the excise tax imposed under Section 4999 of the Code.

Base salary and annual bonus

Each named executive officer's base salary was increased by our board of directors, effective January 1, 2016, to the amounts set forth in the Summary Compensation Table. The amended and restated letter agreements set forth each named executive officer's current base salary, as described above.

As described above, each named executive officer has a target discretionary annual bonus set forth in his or her amended and restated offer letter. Annual bonuses for 2016 for our named executive officers were determined by our board of directors based on achievement of corporate goals. For 2016, the target discretionary annual bonus, as percentage of the named executive officer's annual base salary, was 40% for Ms. Protopapas and 35% for each of Drs. Bergstrom and Lowinger. Each amended and restated letter agreement sets forth each named executive officer's current target discretionary annual bonus, as a percentage of base salary.

Equity compensation

Each of our named executive officers received a grant of stock options in 2016. On August 30, 2016, Ms. Protopapas was granted an option to purchase 158,958 shares of our common stock, Dr. Bergstrom was granted an option to purchase 37,845 shares of our common stock and Dr. Lowinger was granted an option to purchase 45,855 shares of our common stock. On December 28, 2016, Dr. Bergstrom was granted an option to purchase 33,333 shares of our common stock. The stock options granted to our named executive officers were granted under our 2007 Stock Incentive Plan, described below, and vest in equal quarterly installments following the date of grant, becoming fully vested and exercisable on the fourth anniversary of the date of grant of the stock option, generally subject to the named executive officer's continued employment on each applicable vesting date. Our named executive officers also hold stock options granted in years prior to 2016. See the ''Outstanding equity awards at fiscal year-end table'' below for more information regarding outstanding stock options held by our named executive officers as of December 31, 2016.

Outstanding equity awards at fiscal year-end table

The following table sets forth information concerning the outstanding equity awards held by each of our named executive officers as of December 31, 2016.

	Option awards			
Name	Number of securities underlying unexercised options exercisable (#)	Number of securities underlying unexercised options unexercisable (#)	Option exercise price ($/share)	Option expiration date
Anna Protopapas	384,600	494,485(1)	$ 1.53	5/7/2025
	9,934	149,024(2)	$ 4.10	8/29/2026
Donald A. Bergstrom, M.D., Ph.D.	71,194	32,361(3)	$ 1.40	1/9/2024
	39,654	66,090(4)	$ 1.53	6/11/2025
	2,365	35,480(5)	$ 4.10	8/29/2026
	–	33,332(6)	$5.00	12/27/2026
Timothy B. Lowinger, Ph.D.	5,911	–	$6.98	3/3/2018
	5,111	–	$ 7.43	5/11/2021
	103,333	–	$ 1.40	10/1/2022
	7,638	3,472(7)	$ 1.40	1/9/2024
	48,044	80,074(8)	$ 1.53	6/11/2025
	2,866	42,989(9)	$ 4.10	8/29/2026

(1) Represents an option to purchase 879,085 shares of our common stock granted on May 8, 2015, which vests as follows: 25% vested on March 2, 2016 and the remainder vests in 12 equal quarterly installments through March 2, 2019, generally subject to Ms. Protopapas's continued employment through each applicable vesting date.

(2) Represents an option to purchase 158,958 shares of our common stock granted on August 30, 2016, which vests in equal quarterly installments through August 30, 2020, generally subject to Ms. Protopapas's continued employment through each applicable vesting date.

(3) Represents an option to purchase 103,555 shares of our common stock granted on January 10, 2014, which vests as follows: 25% vested on January 10, 2015 and the remainder vests in 12 equal quarterly installments through January 10, 2018, generally subject to Dr. Bergstrom's continued employment through each applicable vesting date.

(4) Represents an option to purchase 105,744 shares of our common stock granted on June 12, 2015, which vests in equal quarterly installments through June 12, 2019, generally subject to Dr. Bergstrom's continued employment through each applicable vesting date.

(5) Represents an option to purchase 37,845 shares of our common stock granted on August 30, 2016, which vests in equal quarterly installments through August 30, 2020, generally subject to Dr. Bergstrom's continued employment through each applicable vesting date.

(6) Represents an option to purchase 33,332 shares of our common stock granted on December 29, 2016, which vests in equal quarterly installments through December 29, 2020, generally subject to Dr. Bergstrom's continued employment through each applicable vesting date.

(7) Represents an option to purchase 11,110 shares of our common stock granted on January 10, 2014, which vests as follows: 25% vested on January 10, 2015 and the remainder vests in 12 equal quarterly installments through January 10, 2018, generally subject to Dr. Lowinger's continued employment through each applicable vesting date.

(8) Represents an option to purchase 128,118 shares of our common stock granted on June 12, 2015, which vests in equal quarterly installments through June 12, 2019, generally subject to Dr. Lowinger's continued employment through each applicable vesting date.

(9) Represents an option to purchase 45,855 shares of our common stock granted on August 30, 2016, which vests in equal quarterly installments through August 30, 2020, generally subject to Dr. Lowinger's continued employment through each applicable vesting date.

Employee benefits plans

We currently provide broad-based health and welfare benefits that are available to all of our employees, including our named executive officers, including health, life, disability and dental insurance. In addition, we maintain a 401(k) retirement plan, under which eligible employees may elect to reduce their current compensation and have the amount of such compensation reduction contributed to the 401(k) plan on their behalf. The 401(k) plan also permits us to make discretionary employer contributions up to the limits allowed by law. In 2016 we made discretionary matching contributions to the 401(k) plan. Other than the 401(k) plan, we do not provide any qualified or non-qualified retirement or deferred compensation benefits to our employees, including our named executive officers.

Payments on termination of employment or change in control

Each of our named executive officers is a party to an amended and restated letter agreement with us that provides for certain payments and benefits in connection with a qualifying termination of his or her employment, as described in ''Employment arrangements with our named executive officers'' above.

Director compensation

The following table sets forth a summary of the compensation we paid to our non-employee directors during 2016. Ms. Protopapas, our President and Chief Executive Officer, received no compensation for her service as a director in 2016 and, as a result, is not included in the table below. The compensation received by Ms. Protopapas for her services as an employee is described in the ''Summary Compensation

Table'' above and the accompanying narrative description. Other than as set forth in the table below, we did not pay any compensation or make any equity or non-equity awards to any of our directors in 2016.

Name	Fees earned or paid in cash ($)	Option awards ($)	All other compensation ($)	Total ($)
David Mott	—	—	—	—
Thomas R. Beck, M.D.	—	—	—	—
Elaine V. Jones, Ph.D.	—	—	—	—
Sara Nayeem, M.D.	—	—	—	—
Kristen Hege, M.D.(1)	—	136,300	—	136,300

(1) Dr. Hege was granted an option to purchase 52,222 shares of our common stock on August 30, 2016, which vests on August 30, 2020, generally subject to Dr. Hege's continued service through such date. The amounts listed in the ''Option Awards'' and ''Total'' columns represent the grant date fair value of the stock option granted to Dr. Hege, computed in accordance with FASB ASC Topic 718 and excluding the effect of estimated forfeitures. The assumptions used in the valuation of these option awards are set forth in Note 9 to our financial statements included in this prospectus on page F-34. As of December 31, 2016, Dr. Hege held 52,222 stock options and no other non-employee directors held any stock options or other equity-based awards.

In June 2017, our board of directors adopted a non-employee director compensation policy, which will become effective upon the completion of this offering. Our non-employee director compensation policy is designed to provide a total compensation package that enables us to attract and retain, on a long-term basis, high caliber non-employee directors. Under the non-employee director compensation policy, our non-employee directors are compensated as follows:

- each non-employee director will receive an annual cash fee of $35,000 ($65,000 for the chairman of our board of directors);
- each non-employee director who is a member of the compensation committee will receive an additional annual cash fee of $5,000 ($10,000 for the compensation committee chairman);
- each non-employee director who is a member of the nominating and corporate governance committee will receive an additional annual cash fee of $4,000 ($8,000 for the nominating and corporate governance committee chairman);
- each non-employee director who is a member of the audit committee will receive an additional annual cash fee of $7,500 ($15,000 for the audit committee chairman);
- each non-employee director who is first elected or appointed to our board of directors after the completion of this offering will be granted an initial option under our 2017 Stock Plan to purchase 20,000 shares of our common stock upon his or her initial election to our board of directors; and
- each non-employee director who is not first elected to our board of directors in the calendar year in which an annual meeting occurs (or, for the avoidance of doubt, at the time of the annual meeting) will be granted an annual option under our 2017 Stock Plan to purchase 10,000 shares of our common stock on the date of the first meeting of our board of directors held after such annual meeting of our stockholders.

The stock options granted to our non-employee directors will have a per share exercise price equal to the fair market value of a share of our common stock on the date of grant and will expire not later than ten years after the date of grant. The initial stock options granted to non-employee directors upon the non-employee director's initial election or appointment to our board of directors will vest in equal quarterly installments over a three-year period following the date of grant, generally subject to such

director's continued service on the board of directors. The annual stock options granted to our non-employee directors will vest in full upon the earlier of the first anniversary of the date of grant or the date of the following annual meeting of stockholders, generally subject to the director's continued service on the board of directors. Any initial stock options and annual stock options granted to our non-employee directors that are then-outstanding will automatically accelerate and become fully vested and exercisable upon the non-employee director's death or termination of service due to disability or upon a change in control. In addition, each non-employee director has the right to elect to receive all or a portion of his or her annual cash fee for service on our board of directors (not including, for the avoidance of doubt, any fees for committee service) under the non-employee director compensation policy in the form of options to purchase shares of our common stock having a grant date fair value approximately equal to such annual cash fee (or portion thereof). Any such election must be made before the January 1st of the year to which the election relates, and the number of shares of our common stock subject to any such option will be determined in accordance with FASB ASC Topic 718 (or any successor provision) based on the closing price of a share of our common stock on the last business day of the calendar year in which the election is made. Any such stock options will vest quarterly over a one-year period, generally subject to the director's continued service on the board of directors.

All cash fees will be paid quarterly, in arrears, or upon the earlier resignation or removal of the non-employee director. The amount of each payment will be prorated for any portion of a calendar quarter that a non-employee director is not serving on our board of directors, based on the number of calendar days served by such non-employee director. For the calendar quarter during which this offering is completed, all annual cash fees will be prorated based on the number of calendar days served by such non-employee director following the completion of this offering.

Each non-employee director is also entitled to reimbursement for reasonable travel and other expenses incurred in connection with attending meetings of the board of directors and any committee on which he or she serves.

Equity plans

2007 Stock Incentive Plan

Our 2007 Stock Incentive Plan, as amended, or our 2007 Plan, provides for the grant of incentive stock options, non-qualified stock options, restricted stock, unrestricted stock, restricted stock units, and other types of equity-based awards. As of May 31, 2017, options to purchase 3,141,625 shares of our common stock were outstanding under our 2007 Plan. No other equity-based awards have been granted under our 2007 Plan and no further awards will be made under our 2007 Plan following the completion of this offering. In connection with this offering, we have adopted a new omnibus equity plan, the Mersana Therapeutics, Inc. 2017 Stock Incentive Plan, as discussed below, under which we will grant equity-based awards in connection with or following this offering. This summary is not a complete description of all provisions of our 2007 Plan and is qualified in its entirety by reference to our 2007 Plan, which is filed as an exhibit to the registration statement of which this prospectus is part.

Our 2007 Plan is administered by our board of directors, which has the discretionary authority to, among other things, determine the employees, directors and other service providers to whom awards may be granted, to grant awards, to determine the specific terms and conditions of each award, and to amend, modify or terminate our 2007 Plan or any award, subject to the participant's consent if such amendment, modification or termination would adversely affect his or her rights and subject to approval by our stockholders to the extent required by applicable law. Our board of directors may delegate certain of its powers under our 2007 Plan to one or more of its members, its committees or officers of the Company. As

used in this summary, the term ''Administrator'' refers to our board of directors or its authorized delegates, as applicable.

Each of our named executive officers has been granted stock options under our 2007 Plan. The per share exercise price of each stock option granted under our 2007 Plan is determined by the Administrator. Each stock option granted under our 2007 Plan has a term of not more than ten years from the date of grant. The time or times each stock option granted under the 2007 Plan vests and becomes exercisable is determined by the Administrator on the date of grant.

In connection with a reorganization event (as defined in our 2007 Plan), the Administrator will take one or more of the following actions with respect to all or any outstanding awards, on such terms as it determines: (i) provide for the assumption or substitution of awards, (ii) upon notice to the applicable participant, provide that awards will become fully exercisable and terminate immediately prior to the consummation of the reorganization event unless exercised within a specified period set forth in the notice, (iii) provide that outstanding awards shall become realizable or deliverable, or restrictions applicable to an award will lapse, in whole or in part, prior to or upon the reorganization event, (iv) provide for a cash payment based on the amount our stockholders will receive upon the consummation the reorganization event or (v) provide that awards will convert into the right to receive liquidation proceeds, in the event of a liquidation or dissolution. Each stock option granted to our named executive officers under our 2007 Plan will become fully vested and exercisable in connection with a qualifying termination of employment following a change in control, as described in ''Employment arrangements with our named executive officers'' above.

2017 Stock Incentive Plan

In June 2017, our board of directors and stockholders adopted the Mersana Therapeutics, Inc. 2017 Stock Incentive Plan, or our 2017 Stock Plan, and, in connection with and following this offering, all equity-based awards will be granted under our 2017 Stock Plan. The following summary describes the material terms of our 2017 Stock Plan. This summary is not a complete description of all provisions of our 2017 Stock Plan and is qualified in its entirety by reference to our 2017 Stock Plan, which is filed as an exhibit to the registration statement of which this prospectus is a part. In connection with this offering, our compensation committee expects to approve stock option awards to our employees covering approximately 35,998 shares of our common stock. These stock options will have a per share exercise price equal to the initial public offering price.

Purposes

The purposes of our 2017 Stock Plan are to attract, retain and reward key employees and directors of, and consultants and advisors to, the Company and its subsidiaries, to incentivize them to generate stockholder value, to enable them to participate in the growth of the Company and to align their interests with the interests of our stockholders.

Administration

Our 2017 Stock Plan will be administered by our compensation committee, which will have the discretionary authority to interpret our 2017 Stock Plan, determine eligibility for and grant awards, determine, modify and waive the terms and conditions of any award, determine the form of settlement of awards, prescribe forms, rules and procedures relating to our 2017 Stock Plan and awards and otherwise do all things necessary or desirable to carry out the purposes of our 2017 Stock Plan. Our compensation committee may delegate such of its duties, powers and responsibilities as it may determine to one or more of its members, members of our board of directors and, to the extent permitted by law, officers of the

Company, and may delegate to employees and other persons such ministerial tasks as it deems appropriate. As used in this summary, the term "Administrator" refers to our compensation committee and its authorized delegates, as applicable.

Eligibility

Key employees, directors, consultants and advisors of the Company and its subsidiaries are eligible to participate in our 2017 Stock Plan. Eligibility for stock options intended to be incentive stock options, or ISOs, is limited to employees of the Company or certain affiliates. Eligibility for stock options, other than ISOs, and stock appreciation rights, or SARs, is limited to individuals who are providing direct services on the date of grant of the award to the Company or certain affiliates. As of May 31, 2017, approximately 68 employees, 2 directors and 5 consultants and advisors would be eligible to participate in our 2017 Stock Plan, including all of our executive officers.

Authorized shares

Subject to adjustment as described below, the maximum number of shares of our common stock that may be delivered in satisfaction of awards under our 2017 Stock Plan is (i) 2,255,000 shares, plus (ii) the number of shares (not to exceed 3,141,625 shares) underlying awards under our 2007 Plan that expire or are terminated, surrendered or cancelled without the delivery of shares of stock, are forfeited to or repurchased by the Company, or otherwise become available again for grant, in each case, on or after the date of our 2017 Stock Plan's adoption, plus (iii) an annual increase, as of January 1st of each year from January 1, 2018 to January 1, 2027, equal to the lesser of (A) 4.0 percent of the number of outstanding shares of our common stock as of the close of business on the immediately preceding December 31st, and (B) the number of shares determined by our board of directors on or prior to such date (the "Share Pool"). A maximum of 5,393,625 shares from the Share Pool may be issued in satisfaction of ISOs. For purposes of the Share Pool, shares will not be treated as delivered unless and until, and to the extent, they are actually issued and delivered. Shares issued in substitution for equity awards of an acquired company that are converted, replaced or adjusted in connection with the acquisition will not reduce the Share Pool.

Shares that may be delivered under our 2017 Stock Plan may be authorized but unissued shares or previously issued shares acquired by the Company.

Individual limits

With respect to any participant in any calendar year, the maximum number of shares for which stock options may be granted, the maximum number of shares subject to SARs that may be granted, and the maximum number of shares subject to awards other than stock options and SARs that may be granted is 1,132,000 shares, 226,500 shares, and 680,000 shares, respectively.

Director limits

In addition to the individual limits described above, the aggregate value of all compensation granted or paid to any non-employee director of the Company with respect to any calendar year, including awards under our 2017 Stock Plan, for his or her services as a director during such calendar year, may not exceed $800,000, with the value of any awards under our 2017 Stock Plan calculated based on the grant date fair value and assuming maximum payout.

Types of awards

Our 2017 Stock Plan provides for the grant of stock options, SARs, restricted and unrestricted stock and stock units, performance awards, and other awards that are convertible into or otherwise based on our common stock. Dividend equivalents may also be provided in connection with awards under our 2017 Stock Plan.

- *Stock options and SARs.* The Administrator may grant stock options, including ISOs, and SARs. A stock option is a right entitling the holder to acquire shares of our common stock upon payment of the applicable exercise price. A SAR is a right entitling the holder upon exercise to receive an amount (payable in cash or shares of equivalent value) equal to the excess of the fair market value of the shares subject to the right over the base value from which appreciation is measured. The exercise price of each stock option, and the base value of each SAR, granted under our 2017 Stock Plan shall be no less than 100% of the fair market value of a share of our common stock on the date of grant (110% in the case of certain ISOs). Other than in connection with certain corporate transactions or changes to our capital structure, stock options and SARs granted under our 2017 Stock Plan may not be repriced or substituted for with new stock options or SARs having a lower exercise price or base value, nor may any consideration be paid upon the cancellation of any stock options or SARs that have a per share exercise or base price greater than the fair market value of a share of our common stock on the date of such cancellation, in each case, without stockholder approval. Each stock option and SAR will have a maximum term of not more than ten years from the date of grant (or five years, in the case of certain ISOs).

- *Restricted and unrestricted stock and stock units.* The Administrator may grant awards of stock, stock units, restricted stock and restricted stock units. A stock unit is an unfunded and unsecured promise, denominated in shares, to deliver shares or cash measured by the value of shares in the future, and a restricted stock unit is a stock unit that is subject to the satisfaction of specified performance or other vesting conditions. Restricted stock is stock subject to restrictions requiring that it be redelivered or offered for sale to the Company if specified conditions are not satisfied.

- *Performance awards.* The Administrator may grant performance awards, which are awards subject to performance criteria. The Administrator may grant performance awards that are intended to qualify as exempt performance-based compensation under Section 162(m), to the extent applicable, and awards that are not intended to so qualify.

- *Other stock-based awards.* The Administrator may grant other awards that are convertible into or otherwise based on shares of our common stock, subject to such terms and conditions as it determines.

- *Substitute awards.* The Administrator may grant substitute awards, which may have terms and conditions that are inconsistent with the terms and conditions of our 2017 Stock Plan.

Vesting; terms of awards

The Administrator determines the terms of all awards granted under our 2017 Stock Plan, including the time or times an award vests or becomes exercisable, the terms on which an award remains exercisable, and the effect of termination of a participant's employment or service on an award. The Administrator may at any time accelerate the vesting or exercisability of an award.

Transferability of awards

Except as the Administrator may otherwise determine, awards may not be transferred other than by will or by the laws of descent and distribution.

Performance criteria

Our 2017 Stock Plan provides for grants of performance awards subject to ''performance criteria.'' Performance criteria with respect to those awards that are intended to qualify as ''performance-based compensation'' for purposes of Section 162(m) are limited to objectively determinable measures of performance relating to any, or any combination of, the following (measured either absolutely or comparatively (including, without limitation, by reference to an index or indices or the performance of one or more companies) and determined either on a consolidated basis or, as the context permits, on a divisional, subsidiary, line of business, project or geographical basis or in combinations thereof and subject to such adjustments, if any, as the Administrator specifies, consistent with the requirements of Section 162(m) of the Code to the extent applicable): sales; revenues; assets; expenses; earnings before or after deduction for all or any portion of interest, taxes, depreciation, or amortization, whether or not on a continuing operations or an aggregate or per share basis; return on equity, investment, capital or assets; one or more operating ratios; borrowing levels, leverage ratios or credit rating; market share; capital expenditures; cash flow; stock price; stockholder return; sales of particular products or services; customer acquisition or retention; acquisitions and divestitures (in whole or in part); joint ventures and strategic alliances; spin-offs, split-ups and the like; reorganizations; or recapitalizations, restructurings, financings (issuance of debt or equity) or refinancings; and strategic business criteria, consisting of one or more objectives based on: meeting specified market penetration or value added, product development or introduction (including, without any clinical trial accomplishments, regulatory or other filings or approvals, or other product development milestones), geographic business expansion, cost targets, cost reductions or savings, customer satisfaction, operating efficiency, acquisition or retention, employee satisfaction, information technology, corporate development (including, without limitation, licenses, innovation, research or establishment of third-party collaborations), manufacturing or process development, legal compliance or risk reduction, patent application or issuance goals, or goals relating to acquisitions or divestitures (in whole or in part) or joint ventures or strategic alliances.

To the extent consistent with the requirements of the performance-based compensation exception under Section 162(m) of the Code, the Administrator may provide in the case of any award intended to qualify for such exception that one or more of the performance criteria applicable to such award will be adjusted in an objectively determinable manner to reflect events (for example, but without limitation, acquisitions or dispositions) occurring during the performance period that affect the applicable performance criteria. During a transition period following the completion of this offering, the Administrator may grant awards under our 2017 Stock Plan that are exempt from Section 162(m) of the Code and its requirements under a special transition rule.

Effect of certain transactions

In the event of certain covered transactions (including the consummation of a merger, consolidation, or the sale of substantially all of the Company's assets or common stock, a change in ownership of the Company's stock, or the dissolution or liquidation of the Company), the Administrator may, with respect to outstanding awards, provide for (in each case, on such terms and subject to such conditions as it deems appropriate):

- The assumption, substitution or continuation of some or all awards (or any portion thereof) by the acquirer or surviving entity;
- The acceleration of exercisability or delivery of shares in respect of any award, in full or in part; and/or
- The cash payment in respect of some or all awards (or any portion thereof) equal to the difference between the fair market value of the shares subject to the award and its exercise or base price, if any.

Except as the Administrator may otherwise determine, each award will automatically terminate immediately upon the consummation of the covered transaction, other than awards that are substituted for or assumed.

Adjustment provisions

In the event of certain corporate transactions, including an extraordinary cash dividend, stock dividend, stock split or combination of shares (including a reverse stock split), recapitalization or other change in our capital structure, the Administrator shall make appropriate adjustments to the maximum number of shares that may be issued under our 2017 Stock Plan, the individual award limits, the number and kind of securities subject to, and, if applicable, the exercise or purchase prices (or base values) of, outstanding awards, and any other provisions affected by such event.

Clawback

The Administrator may provide that any outstanding award or the proceeds of any award or stock acquired thereunder will be subject to forfeiture and disgorgement to the Company if the participant to whom the award was granted violates a non-competition, non-solicitation, confidentiality or other restrictive covenant or to the extent provided in any applicable Company policy that provides for forfeiture or disgorgement, or as otherwise required by law or applicable stock exchange listing standards.

Amendments and termination

The Administrator may at any time amend our 2017 Stock Plan or any outstanding award and may at any time terminate the 2017 Stock Plan as to future grants. However, except as expressly provided in our 2017 Stock Plan, the Administrator may not alter the terms of an award so as to materially and adversely affect a participant's rights without the participant's consent (unless the Administrator expressly reserved the right to do so at the time the award was granted). Any amendments to our 2017 Stock Plan will be conditioned on stockholder approval to the extent required by law or applicable stock exchange requirements.

2017 Employee Stock Purchase Plan

In June 2017, our board of directors and stockholders adopted the Mersana Therapeutics, Inc. 2017 Employee Stock Purchase Plan, or our ESPP, effective as of the completion of this offering. As of the date of this prospectus, no options to purchase shares of our common stock have been granted under our ESPP. The following summary describes the material terms of our ESPP. This summary is not a complete description of all provisions of our ESPP and is qualified in its entirety by reference to our ESPP, which is filed as an exhibit to the registration statement of which this prospectus is a part.

Purposes

The purposes of our ESPP are to attract, retain and reward eligible employees of the Company and its participating subsidiaries, to incentivize them to generate stockholder value, to enable them to participate in the growth of the Company and to align their interests with the interests of our stockholders. Our ESPP is intended to meet the requirements of Section 423 of the Code.

Administration

Our ESPP will be administered by our compensation committee, which will have the authority to interpret our ESPP, determine eligibility under our ESPP, prescribe forms, rules and procedures relating to our ESPP, and otherwise do all things necessary or appropriate to carry out the purposes of our ESPP. Our compensation committee may delegate such of its duties, powers and responsibilities as it may determine

to one or more of its members, members of our board of directors and, to the extent permitted by law, officers of the Company, and may delegate to employees and other persons such ministerial tasks as it deems appropriate. As used in this summary, the term "Administrator" refers to our compensation committee and its authorized delegates, as applicable.

Shares subject to our ESPP

Subject to adjustment as described below, the aggregate number of shares of our common stock available for purchase pursuant to the exercise of options under our ESPP is 225,000 shares, plus an annual increase, as of January 1st of each year from January 1, 2018 to January 1, 2027, equal to the least of (i) 450,000 shares, (ii) 1 percent of the number of outstanding shares of our common stock as of the close of business on the immediately preceding December 31st, and (iii) the number of shares determined by our board of directors on or prior to such date, up to a maximum of 4,725,000 shares of our common stock in the aggregate. Shares to be delivered upon exercise of options under our ESPP may be authorized but unissued shares of our common stock, treasury stock, or shares of our common stock acquired in an open-market transaction. If any option granted under our ESPP expires or terminates for any reason without having been exercised in full or ceases for any reason to be exercisable in whole or in part, the unpurchased shares subject to such option will again be available for purchase under our ESPP.

Eligibility

Participation in our ESPP will generally be limited to employees of the Company and its participating subsidiaries (i) who have been continuously employed by the Company or its subsidiary, as applicable, for a period of at least ten (10) business days as of the first day of the applicable offering period, (ii) whose customary employment with the Company or its subsidiary, as applicable, is for more than five (5) months per calendar year, (iii) who customarily work twenty (20) hours or more per week, and (iv) who satisfy the requirements set forth in our ESPP. The Administrator may establish additional or other eligibility requirements, or change the requirements described in this paragraph, to the extent consistent with Section 423 of the Code. Any employee who owns (or is deemed under statutory attribution rules to own) stock possessing 5% or more of the total combined voting power or value of all classes of stock of the Company or of its parent or subsidiaries, if any, will not be eligible to participate in our ESPP. As of May 31, 2017, approximately 68 employees would be eligible to participate in our ESPP, including all of our executive officers.

General terms of participation

Our ESPP allows eligible employees to purchase shares of our common stock during specified offering periods. Unless otherwise determined by the Administrator, offering periods under our ESPP will be six months in duration and commence on the first business day of January and July of each year. During each offering period, eligible employees will be granted an option to purchase shares of our common stock on the last business day of the offering period. A participant may purchase a maximum of 4,000 shares of our common stock with respect to any offering period (or such lesser number as the Administrator may prescribe). No participant will be granted an option under our ESPP that permits the participant's right to purchase shares of our common stock under our ESPP and under all other employee stock purchase plans of the Company or its parent or subsidiaries, if any, to accrue at a rate that exceeds $25,000 in fair market value (or such other maximum as may be prescribed by the Code) for each calendar year during which any option granted to the participant is outstanding at any time, determined in accordance with Section 423 of the Code.

The purchase price of each share issued pursuant to the exercise of an option under our ESPP on an exercise date will be 85% (or such greater percentage as specified by the Administrator) of the lesser of: (a) the fair market value of a share on date the option is granted, which will be the first day of the offering period, and (b) the fair market value of a share on the exercise date, which will the last business day of the offering period. In order to participate in our ESPP, an eligible employee must execute and deliver to the Administrator or its delegates a payroll deduction authorization form, in accordance with procedures prescribed by, and in a form acceptable to, the Administrator. The payroll deduction authorization form must be delivered to the Company no later than ten (10) business days prior to the first day of the offering period (or such other period specified by the Administrator).

The Administrator has the discretion to change the commencement and exercise dates of offering periods, the purchase price, the maximum number of shares that may be purchased with respect to any offering period, the duration of any offering period and other terms of our ESPP, in each case, without shareholder approval, except as required by law.

Participants in our ESPP will pay for shares purchased under our ESPP through payroll deductions. Participants may elect to authorize payroll deductions between 1 percent and 10 percent of the participant's eligible compensation each payroll period. A payroll deduction authorization under our ESPP will remain in effect for subsequent offering periods unless a participant terminates his or her payroll deduction authorization by timely delivering written notice to the Administrator. Upon termination of employment prior to an exercise date for an offering period, a participant's option will be cancelled automatically. Upon cancellation, the balance of the participant's account will be returned to the participant, without interest, as soon as administratively practicable.

Transfer restrictions

For participants who have purchased shares under our ESPP, the Administrator may impose restrictions prohibiting the transfer, sale, pledge or alienation of such shares, other than by will or by the laws of descent and distribution, for such period as may be determined by the Administrator.

Adjustments

In the event of any change in the outstanding shares of our common stock by reason of a stock dividend, stock split, reverse stock split, split-up, recapitalization, merger, consolidation, reorganization, or other capital change, the aggregate number and type of shares available for purchase under our ESPP, the maximum number and type of shares purchasable during an offering period, and the purchase price per share will be appropriately adjusted.

Corporate transactions

In the event of a (i) merger, consolidation or similar transaction in which the Company is not the surviving corporation or which results in the acquisition of all or substantially all of the then-outstanding shares of our common stock by a single person or entity (or group of persons or entities), (ii) sale of all or substantially all of the Company's assets, (iii) dissolution or liquidation of the Company, or (iv) change in control, the Administrator may provide that each outstanding option will be assumed or substituted for or will be cancelled and the balances of participants' accounts returned, or that the option period will end before the date of the proposed transaction.

Amendment and termination

Our board of directors has discretion to amend our ESPP to any extent and in any manner it may deem advisable, provided that any amendment that would be treated as the adoption of a new plan for purposes

of Section 423 of the Code will require shareholder approval. Out board of directors may suspend or terminate our ESPP at any time.

2017 Cash Bonus Plan

In June 2017, our board of directors and stockholders adopted the Mersana Therapeutics, Inc. 2017 Cash Bonus Plan, or our Cash Plan. Starting in fiscal year 2018, annual award opportunities for executive officers and key employees of the Company and its subsidiaries will be granted under our Cash Plan. Annual award opportunities for 2017 for our named executive officers are described under ''Base salary and annual bonus'' above. The following summary describes the material terms of our Cash Plan. This summary is not a complete description of all provisions of our Cash Plan and is qualified in its entirety by reference to our Cash Plan, which is filed as an exhibit to the registration statement of which this prospectus is a part.

Administration

Our Cash Plan will be administered by our compensation committee and its delegates. As used in this summary, the term ''Administrator'' refers to our compensation committee and its authorized delegates, as applicable.

The Administrator will have the discretionary authority to interpret our Cash Plan, determine eligibility for and grant awards, determine, modify or waive the terms and conditions of any award, prescribe forms, rules and procedures relating to our Cash Plan and awards, and otherwise do all things necessary or appropriate to carry out the purposes of our Cash Plan.

Eligibility and participation

Executive officers and key employees of the Company and its subsidiaries will be eligible to participate in our Cash Plan and will be selected from time to time by the Administrator to participate in the plan.

Awards

For each award granted under our Cash Plan, the Administrator will establish the performance criteria applicable to the award, the amount or amounts payable if the performance criteria are achieved and such other terms and conditions as the Administrator deems appropriate. Our Cash Plan permits the grant of awards that are intended to satisfy the requirements of the performance-based compensation exception under Section 162(m) of the Code, to the extent applicable, or Section 162(m) Awards, and awards that are not intended to satisfy such requirements. For Section 162(m) Awards, the terms of the award will be established within the time periods required under Section 162(m) of the Code.

Performance criteria

Awards under our Cash Plan will be made based on, and subject to achieving, specified criteria established by the Administrator. Performance criteria for Section 162(m) Awards are limited to objectively determinable measures of performance relating to any, or any combination of, the following (measured either absolutely or comparatively (including, without limitation, by reference to an index or indices or the performance of one or more companies) and determined either on a consolidated basis or, as the context permits, on a divisional, subsidiary, line of business, project or geographical basis or in combinations thereof and subject to such adjustments, if any, as the Administrator specifies, consistent with the requirements of Section 162(m) of the Code to the extent applicable): sales; revenues; assets; expenses; earnings before or after deduction for all or any portion of interest, taxes, depreciation, or amortization, whether or not on a continuing operations or an aggregate or per share basis; return on equity, investment, capital or assets; one or more operating ratios; borrowing levels, leverage ratios or credit

rating; market share; capital expenditures; cash flow; stock price; stockholder return; sales of particular products or services; customer acquisition or retention; acquisitions and divestitures (in whole or in part); joint ventures and strategic alliances; spin-offs, split-ups and the like; reorganizations; or recapitalizations, restructurings, financings (issuance of debt or equity) or refinancings; and strategic business criteria, consisting of one or more objectives based on: meeting specified market penetration or value added, product development or introduction (including, without any clinical trial accomplishments, regulatory or other filings or approvals, or other product development milestones), geographic business expansion, cost targets, cost reductions or savings, customer satisfaction, operating efficiency, acquisition or retention, employee satisfaction, information technology, corporate development (including, without limitation, licenses, innovation, research or establishment of third-party collaborations), manufacturing or process development, legal compliance or risk reduction, patent application or issuance goals, or goals relating to acquisitions or divestitures (in whole or in part) or joint ventures or strategic alliances.

To the extent consistent with the requirements of the performance-based compensation exception under Section 162(m) of the Code, the Administrator may provide in the case of any award intended to qualify for such exception that one or more of the performance criteria applicable to such award will be adjusted in an objectively determinable manner to reflect events (for example, but without limitation, acquisitions or dispositions) occurring during the performance period that affect the applicable performance criteria. During a transition period following the completion of this offering, the Administrator may grant awards under the Cash Plan that are exempt from Section 162(m) of the Code and its requirements under a special transition rule.

Payments under an award; individual limits

A participant will be entitled to payment under an award only if all conditions to payment have been satisfied in accordance with our Cash Plan and the terms of the award. Following the end of a performance period, the Administrator will determine (and, to the extent required by Section 162(m) of the Code, take such steps to certify) whether and to what extent the applicable performance criteria have been satisfied and will determine the amount payable under each award. The Administrator has the discretionary authority to increase or decrease the amount actually paid under any award, provided that the actual payment of Section 162(m) Awards may not be more than the amount indicated by the certified level of achievement. The maximum amount payable to any participant in any calendar year under Section 162(m) Awards will be $5,000,000.

Recovery of compensation

Payments in respect of an award will be subject to forfeiture and disgorgement to the Company if the participant to whom the award was granted violates a non-competition, non-solicitation, confidentiality or other restrictive covenant or to the extent provided in any applicable Company policy that provides for forfeiture or disgorgement, or as otherwise required by law or applicable stock exchange listing standards.

Amendment and termination

The Administrator may amend or terminate our Cash Plan at any time, except that any amendment or termination that would materially and adversely affect a participant's rights under an award will require the consent of the affected participant, unless the Administrator expressly reserved the right to so amend the award at the time of grant, and any amendment will be approved by our stockholders if required by Section 162(m) of the Code.

Certain relationships and related party transactions

The following is a description of transactions since January 1, 2014 to which we have been a party, in which the amount involved exceeds $120,000 and in which any of our directors, executive officers or holders of more than 5% of our capital stock, or an affiliate or immediate family member thereof, had or will have a direct or indirect material interest.

Sales and purchases of securities

Series A-1 financing

In July 2012, we entered into a Series A-1 convertible preferred stock purchase agreement, or the Series A-1 purchase agreement, pursuant to which we agreed to issue and sell to nine investors an aggregate of 25,085,153 shares of our Series A-1 Preferred Stock at a purchase price of $1.0763 per share for aggregate consideration of $26,999,150. These shares were issued and sold in three tranches with the first tranche consisting of 11,613,497 shares sold in July 2012, the second tranche consisting of 4,645,540 shares sold in September 2013 and the third tranche consisting of 8,826,116 shares sold in April 2014. In connection with the second tranche, we issued warrants to certain of the Series A-1 investors to purchase an aggregate of 129,491 shares of our common stock at an exercise price per share of $0.05.

The table below sets forth the aggregate number of shares of Series A-1 Preferred Stock and warrants to purchase common stock sold to our directors, executive officers or holders of more than 5% of our capital stock at the time of or as a result of such issuance, and any affiliate or immediate family member thereof:

Name	Warrants for common stock	Shares of series A-1 preferred stock	Aggregate purchase price
Entities Affiliated with New Enterprise Associates	70,593	11,931,173	$12,841,521
Pfizer Inc.	22,590	3,817,975	$4,109,286
F-Prime Capital Partners Healthcare Fund III LP	19,126	3,232,691	$3,479,345
Entities Affiliated with Rho Ventures	16,884	2,853,823	$ 3,071,570
ProQuest Investments III, L.P.	—	2,563,896	$ 2,759,521
Harris & Harris Group, Inc.	—	635,081	$ 683,538

Series B-1 financing

In February 2015, we entered into a Series B-1 convertible preferred stock purchase agreement pursuant to which we agreed to issue and sell to 10 investors an aggregate of 32,936,919 shares of our Series B-1 Preferred Stock at a purchase price of $1.0763 per share for aggregate consideration of $35,450,006. These shares were to be issued and sold in three tranches with the first and second tranches consisting of 9,410,551 shares each and the third tranche consisting of 14,115,817 shares. The first tranche of Series B-1 Preferred Stock was issued and sold in February 2016. The second and third tranches were issued and sold in June 2016.

The table below sets forth the number of shares of Series B-1 Preferred Stock sold to our directors, executive officers or holders of more than 5% of our capital stock at the time of or as a result of such issuance, and any affiliate or immediate family member thereof:

Name	Shares of series B-1 preferred stock	Aggregate purchase price
New Enterprise Associates 14, L.P.	16,329,304	$17,575,230
Pfizer Inc.	5,225,377	$ 5,624,073
Rock Springs Capital Master Fund LP	4,645,545	$5,000,000
F-Prime Capital Partners Healthcare Fund III LP	4,424,343	$ 4,761,920
Entities Affiliated with Rho Ventures	1,527,328	$ 1,643,863
Anna Protopapas	325,189	$ 350,001

Series C-1 Financing

In June 2016, we entered into a Series C-1 convertible preferred stock purchase agreement pursuant to which we issued and sold an aggregate of 14,674,062 shares of our Series C-1 Preferred Stock at a purchase price of $2.25568 per share for aggregate consideration of $33,099,988 to 13 investors.

The table below sets forth the number of shares of Series C-1 Preferred Stock sold to our directors, executive officers or holders of more than 5% of our capital stock at the time of or as a result of such issuance, and any affiliate or immediate family member thereof:

Name	Shares of series C-1 preferred stock	Aggregate purchase price
Hadley Harbor Master Investors (Cayman) L.P. (Nominee Italianflare & Co.)	4,433,252	$9,999,998
Millennium Pharmaceuticals, Inc.	4,433,252	$9,999,998
New Enterprise Associates 14, L.P.	2,216,626	$4,999,999
Rock Springs Capital Master Fund LP	1,329,975	$2,999,998

Investor rights agreement

In connection with our Series B-1 Preferred Stock financing, on February 20, 2015, we entered into a second amended and restated investor rights agreement with certain holders of our common stock and the holders of all of our then-outstanding shares of preferred stock, including certain of our named executive officers, entities with which certain of our directors are affiliated and holders of more than 5% of our capital stock. In connection with our Series C-1 Preferred Stock financing, on June 15, 2016, this agreement was amended and restated as the third amended and restated investor rights agreement and the purchasers of our Series C-1 Preferred Stock became party to this agreement. Pursuant to the terms of this agreement, each holder party to the agreement has agreed to enter a lock-up agreement upon request by us and the underwriter of our common stock, subject to certain terms and conditions, and we granted certain holders of preferred stock certain information rights as well as the right to participate pro rata in any future issuance of capital stock or convertible securities. In addition, the agreement provides that the holders of preferred stock have the right to demand that we file a registration statement with respect to the common stock issued upon conversion of our preferred stock and certain other shares of common

stock. These holders may also request that certain shares of common stock held by them be included in certain registration statements that we are otherwise filing. All provisions of this agreement will terminate upon the completion of this offering other than provisions relating to registration rights and the lock-up agreements. See ''Description of capital stock—Registration rights.''

Voting agreement

In connection with our Series B-1 preferred stock financing, we entered into a second amended and restated voting agreement on February 20, 2015 with certain holders of our common stock and the holders of all of our then-outstanding shares of preferred stock, including certain of our named executive officers, entities with which certain of our directors are affiliated and holders of more than 5% of our capital stock. In connection with our Series C-1 Preferred Stock financing, this agreement was amended and restated on June 15, 2016 as the third amended and restated voting agreement and the purchasers of our Series C-1 Preferred Stock became party to this agreement. The voting agreement, as so amended and restated, related to the election of directors, the grant of board observer rights and certain other matters. All of our current directors were elected pursuant to the terms of this voting agreement. This agreement will terminate upon the completion of this offering.

Right of first refusal and co-sale agreement

In connection with our Series B-1 Preferred Stock financing, we entered into a second amended and restated right of first refusal and co-sale agreement on February 20, 2015 with certain holders of our common stock and the holders of all of our then-outstanding shares of preferred stock, including certain of our named executive officers, entities with which certain of our directors are affiliated and holders of more than 5% of our capital stock. In connection with our Series C-1 Preferred Stock financing, this agreement was amended and restated on June 15, 2016 as the third amended and restated right of first refusal and co-sale agreement and the purchasers of our Series C-1 Preferred Stock became party to this agreement. Pursuant to the terms of this agreement, in the event of a proposed sale of shares of our common stock, the seller was required to first offer such shares to us and to the holders of our preferred stock and allow the holders of our preferred stock to also sell their shares in such proposed sale, subject to certain conditions and restrictions. This agreement will terminate upon the completion of this offering.

Takeda collaboration agreements

In March 2014, we entered into a research collaboration and commercial license agreement with Takeda through its wholly owned subsidiary Millennium Pharmaceuticals, Inc., or Millennium, a holder of more than 5% of our capital stock, for the development and commercialization of ADC product candidates utilizing Fleximer. At the time of this transaction, Anna Protopapas, who became our President, Chief Executive Officer and Director in March 2015, was President of Millennium. This agreement was amended in October 2014 and January 2015, amended and restated in January 2016 and amended in March 2017. Through March 31, 2017, we have received $24.8 million in upfront payments and option fees under this agreement. If products are successfully developed and commercialized against all seven potential target antigens under this agreement, we are entitled to receive future development, regulatory and commercial milestones of up to $1.063 billion and tiered royalties on net sales of products under this agreement. For a more detailed description of this collaboration with Takeda, see ''Business—Takeda ADC Platform Collaboration.''

In January 2016, we entered into a development collaboration and commercial license agreement with Millennium for the global development and commercialization of XMT-1522. During 2016, we received an

upfront payment of $26.5 million and a milestone payment of $20 million under this agreement. If XMT-1522 is successfully developed and commercialized, we are entitled to receive future development, regulatory and commercial milestones of up to $288 million and tiered royalties on net sales of XMT-1522 outside of the United States and Canada under this agreement. Under this agreement, Millennium committed to make equity investments in us of up to $20 million in the aggregate in our next qualifying private financing in and in connection with our initial public offering. As described in "*Series C-1 Financing*" above, Millennium invested approximately $10 million in our Series C-1 financing and has committed to invest the remaining $10 million at the time of our initial public offering, which commitment would be satisfied through Millennium investing in this offering. Additionally, under the terms of the agreement, Millennium and its affiliates may not, without the written consent of our Board of Directors, participate in transactions resulting in a change of control of us for a period of three years following the consummation of this offering. For a more detailed description of this collaboration with Takeda, see "Business—Takeda XMT-1522 Collaboration."

Indemnification agreements and directors' and officers' liability insurance

We have entered into indemnification agreements with each of our directors and, prior to the completion of this offering, plan to enter into indemnification agreements with each of our executive officers. We also maintain a general liability insurance policy which covers certain liabilities of directors and officers of our company arising out of claims based on acts or omissions in their capacities as directors or officers.

Related person transactions policy

In connection with this offering, we plan to adopt a related person transactions policy that will govern the review and approval of related person transactions following this offering. Pursuant to this policy, if we want to enter into a transaction with a related person or an affiliate of a related person, our audit committee will review the proposed transaction to determine, based on applicable rules of The NASDAQ Stock Market and the SEC, whether such transaction requires pre-approval by our audit committee and/or our board of directors. If pre-approval is required, the proposed transaction will be reviewed at the next regular or special meeting of our audit committee and/or our board of directors. We may not enter into a related person transaction unless our audit committee has specifically confirmed in writing that either no further reviews are necessary or that all requisite corporate reviews have been obtained.

Principal stockholders

The following table sets forth information relating to the beneficial ownership of our common stock as of May 31, 2017, by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our outstanding shares of common stock;
- each of our directors;
- each of our named executive officers; and
- all directors and executive officers as a group.

The number of shares beneficially owned by each entity, person, director or executive officer is determined in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares over which the individual has sole or shared voting power or investment power as well as any shares that the individual has the right to acquire within 60 days of May 31, 2017 through the exercise of any stock option, warrants or other rights. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of common stock held by that person.

The percentage of shares beneficially owned is computed on the basis of 17,645,621 shares of our common stock outstanding as of May 31, 2017. Shares of our common stock that a person has the right to acquire within 60 days of May 31, 2017 are deemed outstanding for purposes of computing the percentage ownership of the person holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person, except with respect to the percentage ownership of all directors and executive officers as a group.

Certain of our existing stockholders, New Enterprise Associates, Pfizer Inc. and Takeda Pharmaceutical Company Limited, have indicated an interest in purchasing, in aggregate, up to approximately $30 million in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters could determine to sell more, fewer or no shares to any of these potential investors, and any of these potential

investors could determine to purchase more, fewer or no shares in this offering. The following table does not reflect any potential purchase by these existing principal stockholders or their affiliated entities.

Name and address of beneficial owner(1)	Number of shares beneficially owned	Percentage of shares beneficially owned	
		Before offering	After offering
5% or greater stockholders:			
Entities Affiliated with New Enterprise Associates(2)	7,214,860	40.7%	31.8%
Pfizer Inc.(3)	2,032,221	11.5%	9.0%
Entities Affiliated with F-Prime Capital Partners(4)	1,735,061	9.8%	7.7%
Entities Affiliated with Rho Ventures(5)	1,331,187	7.5%	5.9%
Rock Springs Capital Master Fund LP(6)	1,327,893	7.5%	5.9%
Entities Affiliated with Wellington Management Company(7)	985,167	5.6%	4.4%
Millennium Pharmaceuticals, Inc.(8)	985,167	5.6%	4.4%
ProQuest Investments III, L.P.(9)	955,709	5.4%	4.2%
Directors and named executive officers:			
Anna Protopapas(10)	610,653	3.4%	*
Timothy B. Lowinger(11)	199,599	1.1%	*
Donald A. Bergstrom(12)	157,110	*	*
David Mott(2)	7,210,733	40.7%	31.7%
Elaine V. Jones	—	—	—
Sara Nayeem	—	—	—
Kristen Hege	—	—	—
Andrew A. F. Hack	—	—	—
All executive officers and directors as a group (10 persons)	8,584,084	45.6%	36.0%

* Represents beneficial ownership of less than one percent of our outstanding common stock.

(1) Unless otherwise indicated, the address for each beneficial owner is c/o Mersana Therapeutics, 840 Memorial Drive, Cambridge, Massachusetts 02139.

(2) Consists of (i) 2,647,241 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by New Enterprise Associates 14, L.P., or NEA 14, (ii) 4,129 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by NEA Ventures 2012, L.P., or Ven 2012, (iii) 4,000,314 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by NEA 14, (iv) 492,583 shares of common stock issuable upon conversion of series C-1 convertible preferred stock held by NEA 14, and (v) 70,593 shares of common stock issuable upon exercise of warrants held by NEA 14. The shares directly held by NEA 14 are indirectly held by NEA Partners 14, L.P., or NEA Partners 14, the sole general partner of NEA 14, NEA 14 GP, LTD, or NEA 14 LTD, the sole general partner of NEA Partners 14, and each of the individual Directors of NEA 14 GP, LTD. The individual Directors of NEA 14 LTD (collectively, the NEA 14 Directors) are M. James Barrett, Peter J. Barris, Forest Baskett, Anthony A. Florence, Jr., Patrick J. Kerins, David Mott, Scott D. Sandell, Peter Sonsini and Ravi Viswanathan. The shares directly held by Ven 2012 are indirectly held by Karen P. Welsh, the general partner of Ven 2012. NEA 14, NEA Partners 14, NEA 14 LTD and the NEA 14 Directors share voting and dispositive power with regard to the Company's securities directly held by NEA 14. Karen P. Welsh, the general partner of Ven 2012, has voting and dispositive power with regard to the Company's securities directly held by Ven 2012. All indirect holders of the above referenced securities disclaim beneficial ownership of all applicable shares except to the extent of their actual pecuniary interest therein. The address of New Enterprise Associates is 1954 Greenspring Drive, Suite 600, Timonium, Maryland 21093.

(3) Consists of (i) 848,437 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by Pfizer Inc., (ii) 1,161,194 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by Pfizer Inc., and (iii) 22,590 shares of common stock issuable upon exercise of warrants. As of March 15, 2017, the board of directors of Pfizer Inc. is comprised of the following individuals: Dennis A. Ausiello, Ronald E. Blaylock, W. Don Cornwell, Joseph J. Echevarria, Frances D. Fergusson, Helen H. Hobbs, James M. Kilts, Shantanu Narayen, Suzanne Nora Johnson, Ian C. Read, Stephen W. Sanger and James C. Smith. Pfizer Inc. is a publicly-traded company. Pfizer Inc.'s address is 235 East 42nd Street, New York, NY 10017.

(4) Consists of (i) 718,375 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by F-Prime Capital Partners Healthcare Fund III LP, (ii) 611,606 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by F-Prime Capital Partners Healthcare Fund III LP, (iii) 383,357 shares of common stock held by F-Prime Capital Partners Healthcare Fund LP, (iv) 2,597 shares of common stock held by F-Prime Capital Partners HC Principals Fund LP, and (v) 19,126 shares of common stock issuable

upon exercise of warrants held by F-Prime Capital Partners Healthcare Fund III LP. F-Prime Capital Partners Healthcare Advisors Fund III LP is the general partner of F-Prime Capital Partners Healthcare Fund III LP. F-Prime Capital Partners Healthcare Advisors Fund LP is the general partner of F-Prime Capital Partners Healthcare Fund LP and F-Prime Capital Partners HC Principals Fund LP. F-Prime Capital Partners Healthcare Advisors Fund III LP and F-Prime Capital Partners Healthcare Advisors Fund LP are solely managed by Impresa Management LLC, their general partner and investment manager. Each of the entities listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address of F-Prime Capital Partners is 245 Summer Street, Boston, Massachusetts 02210.

(5) Consists of (i) 423,267 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by Rho Ventures V, L.P., or RV V, (ii) 37,162 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by Rho Ventures V Affiliates, L.L.C., or RV V Affiliates, (iii) 143,181 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by Pinnacle Investment Partners "Q-6", L.P., or Pinnacle, (iv) 30,569 shares of common stock issuable upon conversion of series A-1 convertible preferred stock held by Kariba LLC, or Kariba, (v) 279,690 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by Pinnacle, (vi) 59,714 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by Kariba, (vii) 313,221 shares of common stock held by RV V, (viii) 27,499 shares of common stock held by RV V Affiliates, (ix) 15,522 shares of common stock issuable upon exercise of warrants held by RV V and (x) 1,362 shares of common stock issuable upon exercise of warrants held by RV V Affiliates. RMV V, L.L.C., or RMV, is the General Partner of RV V and the managing member of RV V Affiliates. Rho Capital Partners LLC, or RCP LLC, is the managing member of RMV. As such, RCP LLC and RMV possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. RCP LLC and RMV hold no shares of the Issuer directly. Habib Kairouz, Mark Leschly and Joshua Ruch are the managing members of RCP LLC, the managing member of RMV. As such, Messrs. Kairouz, Leschly and Ruch possess power to direct the voting and disposition of the shares owned by RV V and RV V Affiliates and may be deemed to have indirect beneficial ownership of the shares held by RV V and RV V Affiliates. Each of Messrs. Kairouz, Leschly and Ruch disclaim beneficial ownership of these shares except to the extent of their pecuniary interest therein. The general partner of Pinnacle is Pinnacle Management Partners LLC, and its managing member is RUGU Partners LLC, or Rugu. As such, Pinnacle Management Partners LLC and Rugu possess power to direct the voting and disposition of the shares owned by Pinnacle and may be deemed to have indirect beneficial ownership of the shares held by Pinnacle. Ruch is the managing member of RUGU and as such, Ruch possesses power to direct the voting and disposition of the shares owned by Pinnacle and may be deemed to have indirect beneficial ownership of the shares held by Pinnacle. Ruch disclaims beneficial ownership of the shares held by Pinnacle except to the extent of his pecuniary interest therein The managing member of Kariba is Ruch and as such, Ruch possesses power to direct the voting and disposition of the shares owned by Kariba and may be deemed to have indirect beneficial ownership of the shares held by Kariba. The address of RV V and RV V Affiliates is Carnegie Hall Tower, 152 West 57th Street, 23rd Floor, New York, NY 10019. The address of Pinnacle and Kariba is 343 Thornall Street, Suite 600, c/o Pinnacle Management Services LLC, Edison, NJ 08837.

(6) Consists of (i) 1,032,343 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by Rock Springs Capital Master Fund LP and (ii) 295,550 shares of common stock issuable upon conversion of series C-1 convertible preferred stock held by Rock Springs Capital Master Fund LP. Rock Springs Capital Master Fund LP and its general partner, Rock Springs General Partner LLC, each have sole voting and investment power, and Kris Jenner, Gordon Margraf "Mark" Bussard and Graham McPhail, the managers of Rock Springs General Partner LLC, each have shared voting and investment power with regard to the shares owned by Rock Springs Capital Master Fund LP. The address of Rock Springs Capital Master Fund LP is 650 South Exeter Street, Suite 1070, Baltimore, Maryland 21202.

(7) Consists of shares of 985,167 shares of common stock issuable upon conversion of series C-1 convertible preferred stock held by Italianflare & Co. (as nominee for Hadley Harbor Master Investors (Cayman) L.P.). Wellington Management Company LLP is the investment adviser to this entity. Wellington Management Company LLP is an investment adviser registered under the Investment Advisers Act of 1940, as amended, and is an indirect subsidiary of Wellington Management Group LLP. Wellington Management Company LLP and Wellington Management Group LLP may each be deemed to share beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of the shares indicated in the table, all of which are held of record by the entity named in the table or a nominee on its behalf. The business address of the entity named in the table is c/o Wellington Management Company LLP, 280 Congress Street, Boston, Massachusetts 02210. The business address of Wellington Management Company LLP and Wellington Management Group LLP is 280 Congress Street, Boston, Massachusetts 02210.

(8) Consists of 985,167 shares of common stock issuable upon conversion of shares of series C-1 convertible preferred stock held by Millennium Pharmaceuticals, Inc. Millennium Pharmaceuticals, Inc. is a wholly owned subsidiary of Takeda Pharmaceutical Company Limited. The address of Millennium Pharmaceuticals, Inc. is 40 Landsdowne Street, Cambridge, MA 02139.

(9) Consists of (i) 385,955 shares of common stock and (ii) 569,754 shares of common stock issuable upon conversion of series A-1 convertible preferred stock. ProQuest Associates III LLC, or Associates III, is the general partner of ProQuest Investments III, L.P. Jay Moorin and Alain Schreiber are managing members of Associates III. Each individual managing member disclaims beneficial ownership of these shares, except to the extent of their pecuniary interest in such shares. The address of ProQuest Investments III, L.P. is 2430 Vanderbilt Beach Road, 108-190, Naples, FL 34109.

(10) Consists of (i) 72,263 shares of common stock issuable upon conversion of series B-1 convertible preferred stock held by the Kinney/ Protopapas Irrevocable Trust, (ii) 120,302 shares of common stock, and (iii) 418,088 options to purchase common stock that are exercisable as of May 31, 2017 or will become exercisable within 60 days after such date.

(11) Consists of 199,599 options to purchase common stock that are exercisable as of May 31, 2017 or will become exercisable within 60 days after such date.

(12) Consists of 157,110 options to purchase common stock that are exercisable as of May 31, 2017 or will become exercisable within 60 days after such date.

Description of capital stock

General

The following description of our capital stock is intended as a summary only and is qualified in its entirety by reference to our amended and restated certificate of incorporation and amended and restated by-laws that will be in effect at the closing of this offering, which will be filed as exhibits to the registration statement of which this prospectus is a part, and to the applicable provisions of the DGCL. We refer in this section to our amended and restated certificate of incorporation as our certificate of incorporation, and we refer to our amended and restated by-laws as our by-laws. The description of our capital stock reflects changes to our capital structure that will occur upon the closing of this offering.

Upon the closing of this offering and the filing of our amended and restated certificate of incorporation, our authorized capital stock will consist of 175,000,000 shares of our common stock, par value $0.0001 per share, and 25,000,000 shares of our preferred stock, par value $0.0001 per share, all of which preferred stock will be undesignated.

As of May 31, 2017, we had issued and outstanding:

- 1,490,950 shares of our common stock;
- 72,696,134 shares of our preferred stock that are convertible into 16,154,671 shares of our common stock;
- options to purchase a total of 3,141,625 shares of our common stock with a weighted-average exercise price of $2.89 per share; and
- 129,491 warrants to purchase our common stock at an exercise price of $0.05 per share.

As of May 31, 2017, we had 71 stockholders of record.

Common stock

Dividend rights

Subject to preferences that may apply to shares of preferred stock outstanding at the time, holders of outstanding shares of common stock will be entitled to receive dividends out of assets legally available at the times and in the amounts as our board of directors may from time to time determine.

Voting rights

Each outstanding share of common stock will be entitled to one vote on all matters submitted to a vote of stockholders. Holders of shares of our common stock shall have no cumulative voting rights.

Preemptive rights

Our common stock will not be entitled to preemptive or other similar subscription rights to purchase any of our securities.

Conversion or redemption rights

Our common stock will be neither convertible nor redeemable.

Liquidation rights

Upon our liquidation, the holders of our common stock will be entitled to receive pro rata our assets which are legally available for distribution, after payment of all debts and other liabilities and subject to the prior rights of any holders of preferred stock then outstanding.

Listing

We have applied to list our common stock on The NASDAQ Global Market under the trading symbol "MRSN."

Preferred stock

Our board of directors may, without further action by our stockholders, from time to time, direct the issuance of shares of preferred stock in series and may, at the time of issuance, determine the designations, powers, preferences, privileges, and relative participating, optional or special rights as well as the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights of the common stock. Satisfaction of any dividend preferences of outstanding shares of preferred stock would reduce the amount of funds available for the payment of dividends on shares of our common stock. Holders of shares of preferred stock may be entitled to receive a preference payment in the event of our liquidation before any payment is made to the holders of shares of our common stock. Under certain circumstances, the issuance of shares of preferred stock may render more difficult or tend to discourage a merger, tender offer or proxy contest, the assumption of control by a holder of a large block of our securities or the removal of incumbent management. Upon the affirmative vote of a majority of the total number of directors then in office, our board of directors, without stockholder approval, may issue shares of preferred stock with voting and conversion rights which could adversely affect the holders of shares of our common stock and the market value of our common stock. Upon consummation of this offering, there will be no shares of preferred stock outstanding, and we have no present intention to issue any shares of preferred stock.

Registration rights

We are party to a third amended and restated investor rights agreement that grants certain registration rights to the holders of shares of our common stock issuable upon conversion of the shares of preferred stock. The shares subject to registration rights under this third amended and restated investor rights agreement, or the registrable shares, will represent approximately 77.6% of our outstanding common stock after this offering, or 75.1% if the underwriters exercise their option to purchase additional shares.

Under the third amended and restated investor rights agreement, holders of registrable shares can demand that we file a registration statement or request that their shares be included on a registration statement that we are otherwise filing, in either case, registering the resale of their shares of common stock. These registration rights are subject to conditions and limitations, including the right, in certain circumstances, of the underwriters of an offering to limit the number of shares included in such registration and our right, in certain circumstances, not to effect a requested S-1 or S-3 registration during the period that is 60 days before our estimated date of filing of, and ending on a date that is 90 days (or 180 days in the case of our initial public offering) after the effective date of, a company-initiated registration statement.

The registration rights of any holder will terminate upon the earliest to occur of: (i) the date on which such holder holds no registrable shares, (ii) such time as Rule 144 or another similar exemption under the

Securities Act is available for the sale of all of such holder's registrable shares without the requirement for us to be in compliance with the current publication information required under Rule 144(c)(1), and (iii) the fifth anniversary of this offering.

Demand registration rights

After the expiration of the 180-day period following the completion of this offering, the holders of at least a majority of the registrable shares may require us to file a registration statement on Form S-1 under the Securities Act at our expense with respect to the resale of their registrable shares at an aggregate offering price to the public (net of underwriting discounts and commissions) of not less than $10 million, and we are required to use our commercially reasonable efforts to effect the registration and our reasonable best efforts to do so within 90 days.

At any time when we are eligible to file a registration statement on Form S-3 under the Securities Act, any holders of the registrable shares may require us to file a registration statement on Form S-3 at our expense with respect to the resale of their registrable shares at an aggregate offering price to the public (net of underwriting discounts and commissions) of not less than $3 million, and we are required to use our commercially reasonable efforts to effect the registration and our reasonable best efforts to do so within 90 days.

Piggyback registration rights

If we propose to register any of our securities under the Securities Act for our own account or the account of any other holder (excluding any registration on a form that does not permit secondary sales, any demand registration or any registration related to employee benefit plans, the offer or sale of debt securities, a corporate reorganization or other Rule 145 transaction), the holders of registrable shares are entitled to notice of such registration and to request that we include registrable shares for resale on such registration statement, and we are required to use our commercially reasonable efforts to include such shares in such registration statement.

The third amended and restated investor rights agreement contains customary cross-indemnification provisions, pursuant to which we are obligated to indemnify the selling stockholders in the event of misstatements or omissions in the registration statement attributable to us or any violation of the federal or state securities laws, rules or regulations and they are obligated to indemnify us for misstatements or omissions in the registration statement attributable to them.

We are required to pay substantially all expenses incurred in connection with registrations, filings or qualifications, including the reasonable fees and disbursements (not to exceed $100,000) of one counsel for the selling stockholders. We are not required to pay registration expenses if a demand or piggyback registration is withdrawn by holders of at least a majority of shares to be registered, unless the withdrawal is due to discovery of a materially adverse change in our business.

Anti-takeover effects of our certificate of incorporation and our by-laws

Our certificate of incorporation and by-laws will contain certain provisions that are intended to enhance the likelihood of continuity and stability in the composition of our board of directors but which may have the effect of delaying, deferring or preventing a future takeover or change in control of us unless such takeover or change in control is approved by our board of directors.

These provisions include:

Classified board. Our certificate of incorporation will provide that our board of directors will be divided into three classes of directors, with the classes as nearly equal in number as possible. As a result, approximately one-third of our board of directors will be elected each year. The classification of directors will have the effect of making it more difficult for stockholders to change the composition of our board. Our certificate of incorporation will also provide that, subject to any rights of holders of preferred stock to elect additional directors under specified circumstances, the number of directors will be fixed exclusively pursuant to a resolution adopted by our board of directors. Upon completion of this offering, we expect that our board of directors will have members.

Action by written consent; special meetings of stockholders. Our certificate of incorporation will provide that stockholder action can be taken only at an annual or special meeting of stockholders and cannot be taken by written consent in lieu of a meeting. Our certificate of incorporation and the by-laws will also provide that, except as otherwise required by law, special meetings of the stockholders can only be called pursuant to a resolution adopted by a majority of our board of directors. Except as described above, stockholders will not be permitted to call a special meeting or to require our board of directors to call a special meeting.

Removal of directors. Our certificate of incorporation will provide that our directors may be removed only for cause by the affirmative vote of at least 75% of the voting power of our outstanding shares of capital stock, voting together as a single class. This requirement of a supermajority vote to remove directors could enable a minority of our stockholders to prevent a change in the composition of our board.

Advance notice procedures. Our by-laws will establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to the board of directors. Stockholders at an annual meeting will only be able to consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors or by a stockholder who was a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has given our Secretary timely written notice, in proper form, of the stockholder's intention to bring that business before the meeting. Although the by-laws will not give our board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting, the by-laws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of us.

Supermajority approval requirements. The DGCL generally provides that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or by-laws, unless either a corporation's certificate of incorporation or by-laws requires a greater percentage. Our certificate of incorporation and by-laws will provide that the affirmative vote of holders of at least 75% of the total votes eligible to be cast in the election of directors will be required to amend, alter, change or repeal specified provisions. This requirement of a supermajority vote to approve amendments to our certificate of incorporation and by-laws could enable a minority of our stockholders to exercise veto power over any such amendments.

Authorized but unissued shares. Our authorized but unissued shares of common stock and preferred stock will be available for future issuance without stockholder approval. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate

acquisitions and employee benefit plans. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of a majority of our common stock by means of a proxy contest, tender offer, merger or otherwise.

Exclusive forum. Our certificate of incorporation will require, to the fullest extent permitted by law, that derivative actions brought in the name of the Company, actions against directors, officers and employees for breach of a fiduciary duty and other similar actions may be brought only in specified courts in the State of Delaware. Although we believe this provision benefits us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, the provision may have the effect of discouraging lawsuits against our directors and officers. See ''Risk factors—Our amended and restated certificate of incorporation designates the state or federal courts within the State of Delaware as the exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.''

Section 203 of the DGCL

Upon completion of this offering, we will be subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a ''business combination'' with an ''interested stockholder'' for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A ''business combination'' includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An ''interested stockholder'' is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation's voting stock.

Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions: before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder; upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or at or after the time the stockholder became interested, the business combination was approved by our board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may ''opt out'' of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or by-laws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Transfer agent and registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent and registrar's address is 250 Royall Street, Canton, Massachusetts 02021.

Shares eligible for future sale

Prior to this offering, there has been no public market for our common stock. Future sales of our common stock, including shares issued upon the exercise of outstanding options or warrants, in the public market after this offering, or the perception that those sales may occur, could cause the prevailing market price for our common stock to fall or impair our ability to raise equity capital in the future. As described below, only a limited number of shares of our common stock will be available for sale in the public market for a period of several months after completion of this offering due to contractual and legal restrictions on resale described below. Future sales of our common stock in the public market either before (to the extent permitted) or after restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price of our common stock at such time and our ability to raise equity capital at a time and price we deem appropriate.

Sale of restricted shares

Upon the closing of this offering, based on the number of shares of our common stock outstanding as of May 31, 2017, we will have approximately 22,645,621 shares of common stock outstanding. Of these shares, all of the shares of common stock to be sold in this offering, and any shares sold upon exercise of the underwriters' option to purchase up to additional shares, will be freely tradable in the public market without restriction or further registration under the Securities Act of 1933, as amended, or the Securities Act, unless the shares are held by any of our ''affiliates'' as such term is defined in Rule 144 of the Securities Act. All remaining shares of common stock held by existing stockholders immediately prior to the completion of this offering will be ''restricted securities'' as such term is defined in Rule 144. These restricted securities were issued and sold by us, or will be issued and sold by us, in private transactions and are eligible for public sale only if registered under the Securities Act or if they qualify for an exemption from registration under the Securities Act, including the exemptions provided by Rule 144 or Rule 701, which rules are summarized below.

As a result of the lock-up agreements referred to below and the provisions of Rule 144 and Rule 701 under the Securities Act, the shares of our common stock that will be available for sale in the public market are as follows:

Approximate Number of shares	First date available for sale into public market
5,007,409 shares	On the date of this prospectus
17,638,212 shares	180 days after the date of this prospectus upon expiration of the lock-up agreements referred to below, subject in some cases to applicable volume limitations under Rule 144

Lock-up agreements

In connection with this offering, we, our directors, our executive officers and stockholders beneficially owning substantially all of our shares of common stock have agreed, subject to certain exceptions, with the underwriters not to dispose of or hedge any shares of our common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of the lock-up agreement continuing through the date 180 days after the date of this prospectus, except with the prior written consent of J.P. Morgan Securities LLC, Cowen and Company, LLC and Leerink Partners LLC, together the representatives of the underwriters. The lock-up restrictions and specified exceptions are described in more detail in the section under the heading ''Underwriting.''

Following the lock-up periods set forth in the agreements described above, and assuming that the representatives of the underwriters do not release any parties from these agreements, all of the shares of our common stock that are restricted securities or are held by our affiliates as of the date of this prospectus will be eligible for sale in the public market in compliance with Rule 144 under the Securities Act.

In addition, pursuant to our third amended and restated investor rights agreement, the parties thereto have agreed that, if requested by us and the representatives of the underwriters of the initial public offering of our securities, they will not sell or otherwise transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale of any shares of our common stock (or any other security) held by such party immediately prior to this offering (and excluding any shares of common stock acquired in this offering or in the open market following this offering) during the same 180-day restricted period referred to above and to execute a market standoff agreement with the underwriters in customary form and consistent with these restrictions. We expect the representatives of the underwriters to invoke this request prior to the completion of this offering and, accordingly, that the parties to this agreement will be subject to these restrictions.

Pursuant to our standard forms of option agreements under our 2007 Stock Incentive Plan, recipients of options to purchase our common stock under our 2007 Stock Incentive Plan have also agreed not to sell, make short sale of, loan, grant any options for the purchase of or otherwise dispose of any shares of our common stock without our prior written consent or the consent of the underwriters during the same 180-day restricted period referred to above and to execute any agreement reflecting such restrictions requested by us or the underwriters.

Rule 144

In general, under Rule 144, as currently in effect, once we have been subject to the public company reporting requirements of the Exchange Act for at least 90 days, a person (or persons whose shares are required to be aggregated) who is not deemed to have been one of our ‘‘affiliates’’ for purposes of Rule 144 at any time during the three months preceding a sale, and who has beneficially owned restricted securities within the meaning of Rule 144 for at least six months, including the holding period of any prior owner other than one of our ‘‘affiliates,’’ is entitled to sell those shares in the public market (subject to the lock-up agreement referred to above, if applicable) without complying with the manner of sale, volume limitations or notice provisions of Rule 144, but subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than ‘‘affiliates,’’ then such person is entitled to sell such shares in the public market without complying with any of the requirements of Rule 144 (subject to the lock- up agreement referred to above, if applicable). In general, under Rule 144, as currently in effect, once we have been subject to the public company reporting requirements of the Exchange Act for at least 90 days, our ‘‘affiliates,’’ as defined in Rule 144, who have beneficially owned the shares proposed to be sold for at least six months are entitled to sell in the public market, upon expiration of any applicable lock-up agreements and within any three-month period, a number of those shares of our common stock that does not exceed the greater of:

- 1% of the number of shares of common stock then outstanding, which will equal approximately shares of common stock immediately after this offering; or
- the average weekly trading volume of our common stock on The NASDAQ Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to such sale.

Such sales under Rule 144 by our ‘‘affiliates’’ or persons selling shares on behalf of our ‘‘affiliates’’ are also subject to certain manner of sale provisions, notice requirements and to the availability of current public information about us. Notwithstanding the availability of Rule 144, the holders of substantially all of our restricted securities have entered into lock-up agreements as referenced above and their restricted securities will become eligible for sale (subject to the above limitations under Rule 144) upon the expiration of the restrictions set forth in those agreements.

Rule 701

In general, under Rule 701 as currently in effect, any of our employees, directors, officers, consultants or advisors who acquired common stock from us in connection with a written compensatory stock or option plan or other written agreement in compliance with Rule 701 under the Securities Act before the effective date of the registration statement of which this prospectus is a part (to the extent such common stock is not subject to a lock-up agreement) is entitled to rely on Rule 701 to resell such shares beginning 90 days after we become subject to the public company reporting requirements of the Exchange Act in reliance on Rule 144, but without compliance with the holding period requirements contained in Rule 144. Accordingly, subject to any applicable lock-up agreements, beginning 90 days after we become subject to the public company reporting requirements of the Exchange Act, under Rule 701 persons who are not our ‘‘affiliates,’’ as defined in Rule 144, may resell those shares without complying with the minimum holding period or public information requirements of Rule 144, and persons who are our ‘‘affiliates’’ may resell those shares without compliance with Rule 144’s minimum holding period requirements (subject to the terms of the lock-up agreement referred to below, if applicable).

Equity incentive plans

We intend to file with the SEC a registration statement under the Securities Act covering the shares of common stock that we may issue upon exercise of outstanding options reserved for issuance under the 2007 Incentive Option Plan and the 2017 Stock Plan. Such registration statement is expected to be filed and become effective as soon as practicable after the completion of this offering. Accordingly, shares registered under such registration statement will be available for sale in the open market following its effective date, subject to the lock-up agreements described above, if applicable.

Material U.S. federal income and estate tax considerations for non-U.S. holders of common stock

The following is a summary of the material U.S. federal income and estate tax considerations relating to the purchase, ownership and disposition of our common stock by Non-U.S. Holders (defined below). This summary does not purport to be a complete analysis of all the potential tax considerations relevant to Non-U.S. Holders. This summary is based upon the Internal Revenue Code of 1986, as amended, or the Internal Revenue Code, the Treasury regulations promulgated or proposed thereunder and administrative and judicial interpretations thereof, all as of the date hereof and all of which are subject to change at any time (including as a result of tax reform in the United States), possibly on a retroactive basis.

This summary assumes that shares of our common stock are held as ''capital assets'' within the meaning of Section 1221 of the Internal Revenue Code (generally, property held for investment). This summary does not purport to deal with all aspects of U.S. federal income and estate taxation that might be relevant to particular Non-U.S. Holders in light of their particular investment circumstances or status, nor does it address specific tax considerations that may be relevant to particular persons (including, for example, financial institutions, broker-dealers, insurance companies, partnerships or other pass-through entities, certain U.S. expatriates, tax-exempt organizations, pension plans, ''controlled foreign corporations'', ''passive foreign investment companies'', corporations that accumulate earnings to avoid U.S. federal income tax, persons in special situations, such as those who have elected to mark securities to market or those who hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security or other integrated investment, or holders subject to the alternative minimum tax). In addition, except as explicitly addressed herein with respect to estate tax, this summary does not address estate and gift tax considerations, the Medicare contribution tax on net investment income, or considerations under the tax laws of any state, local or non-U.S. jurisdiction.

For purposes of this summary, a ''Non-U.S. Holder'' means a beneficial owner of our common stock that for U.S. federal income tax purposes is not classified as a partnership and is not:

- an individual who is a citizen or resident of the United States;
- a corporation or any other organization taxable as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is included in gross income for U.S. federal income tax purposes regardless of its source; or
- a trust if (1) a U.S. court is able to exercise primary supervision over the trust's administration and one or more U.S. persons have the authority to control all of the trust's substantial decisions or (2) the trust has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of persons treated as its partners for U.S. federal income tax purposes will generally depend upon the status of the partner as well as the activities of the partnership. Partnerships and other entities that are classified as partnerships for U.S. federal income tax purposes and persons holding our common stock through a partnership or other entity classified as a partnership for U.S. federal income tax purposes are urged to consult their own tax advisors.

There can be no assurance that the Internal Revenue Service, or IRS, will not challenge one or more of the tax consequences described herein, and we have not obtained, nor do we intend to obtain a ruling from the IRS with respect to the U.S. federal income or estate tax consequences to a Non-U.S. Holder of the purchase, ownership or disposition of our common stock.

THIS SUMMARY IS FOR GENERAL INFORMATION ONLY. NON-U.S. HOLDERS ARE URGED TO CONSULT THEIR TAX ADVISORS CONCERNING THE U.S. FEDERAL INCOME AND ESTATE TAXATION, STATE, LOCAL AND NON-U.S. TAXATION AND OTHER TAX CONSEQUENCES TO THEM OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK.

Distributions on our common stock

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. In the event that we do make a distribution of cash or property with respect to our common stock, any such distributions generally will constitute dividends for U.S. federal income tax purposes to the extent of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will constitute a return of capital and will first reduce the holder's adjusted tax basis in our common stock, but not below zero. Any remaining excess will be treated as capital gain, subject to the tax treatment described below in ''—Gain on Sale, Exchange or Other Taxable Disposition of Our Common Stock.'' Any such distribution would also be subject to the discussions below under the sections titled ''—Additional Withholding and Reporting Requirements'' and ''—Backup Withholding and Information Reporting.''

Dividends paid to a Non-U.S. Holder generally will be subject to a 30% U.S. federal withholding tax unless such Non-U.S. Holder provides us or the applicable withholding agent, as the case may be, with the appropriate IRS Form W-8, such as:

- IRS Form W-8BEN or IRS Form W-8BEN-E (or successor forms) certifying, under penalties of perjury, entitlement to a reduction in withholding under an applicable income tax treaty, or
- IRS Form W-8ECI (or successor form) certifying that a dividend paid on common stock is not subject to withholding tax because it is effectively connected with a trade or business in the United States of the Non-U.S. Holder (in which case such dividend generally will be subject to regular graduated U.S. tax rates as described below).

The certification requirement described above must be provided to us or the applicable withholding agent prior to the payment of dividends, and may be required to be updated periodically. The certification also may require a Non-U.S. Holder that provides an IRS form or that claims treaty benefits to provide its U.S. taxpayer identification number. Special certification and other requirements apply in the case of certain Non-U.S. Holders that hold shares of our common stock through intermediaries or are pass-through entities for U.S. federal income tax purposes.

Each Non-U.S. Holder is urged to consult its own tax advisor about the specific methods for satisfying these requirements. A claim for exemption from U.S. federal withholding tax will not be valid if the person receiving the applicable form has actual knowledge or reason to know that the statements on the form or other certification are false.

If dividends are effectively connected with a trade or business in the United States of a Non-U.S. Holder (and, if required by an applicable income tax treaty, are attributable to a U.S. permanent establishment), the Non-U.S. Holder, although exempt from the withholding tax described above (provided that the certifications described above are satisfied), generally will be subject to U.S. federal income tax on such dividends on a net income basis in the same manner as if it were a resident of the United States. In addition, if a Non-U.S. Holder is treated as a corporation for U.S. federal income tax purposes, the Non-U.S. Holder may be subject to an additional "branch profits tax" equal to 30% (unless reduced by an applicable income treaty) of its earnings and profits in respect of such effectively connected dividend income.

Non-U.S. Holders that do not timely provide us or the applicable withholding agent with the required certification prior to the payment of any dividends, but which are eligible for a reduced rate of U.S. federal withholding tax pursuant to an income tax treaty, may obtain a refund or credit of any excess amount withheld by timely filing an appropriate claim for refund with the IRS.

Gain on sale, exchange or other taxable disposition of our common stock

Subject to the discussions below under the sections titled "—Additional Withholding and Reporting Requirements" and "—Backup Withholding and Information Reporting," in general, a Non- U.S. Holder will not be subject to U.S. federal income tax or withholding tax on gain realized upon such holder's sale, exchange or other taxable disposition of shares of our common stock unless (i) such Non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition, and certain other conditions are met, (ii) we are or have been a "United States real property holding corporation", as defined in the Internal Revenue Code, or a USRPHC, at any time within the shorter of the five-year period preceding the disposition and the Non-U.S. Holder's holding period in the shares of our common stock, and certain other requirements are met, or (iii) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment maintained by such Non-U.S. Holder in the United States).

If the first exception above applies, the Non-U.S. Holder generally will be subject to U.S. federal income tax at a rate of 30% (or at a reduced rate under an applicable income tax treaty) on the amount by which such Non-U.S. Holder's capital gains allocable to U.S. sources exceed capital losses allocable to U.S. sources during the taxable year of the disposition. If the third exception above applies, the Non-U.S. Holder generally will be subject to U.S. federal income tax with respect to such gain on a net income basis in the same manner as if it were a resident of the United States, and a Non-U.S. Holder that is a corporation for U.S. federal income tax purposes may also be subject to a branch profits tax with respect to any earnings and profits attributable to such gain at a rate of 30% (or at a reduced rate under an applicable income tax treaty).

Generally, a corporation is a USRPHC only if the fair market value of its United States real property interests (as defined in the Internal Revenue Code) equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business. Although there can be no assurance in this regard, we believe that we are not, and do not anticipate becoming, a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our United States real property interests relative to the fair market value of other business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we became a USRPHC, a Non-U.S. Holder would not be subject to U.S. federal income tax on a sale, exchange or other taxable disposition of our common stock by reason of our status as USRPHC so long as our common stock is regularly traded on an established securities market (as defined in the Internal

Revenue Code) at any time during the calendar year in which the disposition occurs and such Non-U.S. Holder does not own and is not deemed to own (either directly, indirectly or constructively) more than 5% of our common stock at any time during the shorter of the five-year period ending on the date of disposition and the holder's holding period. However, no assurance can be provided that our common stock will be regularly traded on an established securities market for purposes of the rules described above. Prospective investors are encouraged to consult their own tax advisors regarding the possible consequences to them if we are, or were to become, a USRPHC.

Additional withholding and reporting requirements

Legislation and related guidance commonly referred to as "FATCA" will impose, in certain circumstances, U.S. federal withholding at a rate of 30% on payments of (a) dividends on our common stock and (b) gross proceeds from the sale or other disposition of our common stock on or after January 1, 2019. In the case of payments made to a "foreign financial institution" as defined under FATCA and the Internal Revenue Code (including, among other entities, an investment fund), as a beneficial owner or as an intermediary, the withholding tax will generally be imposed upon such institution, subject to certain exceptions, unless such institution either (i) enters into (or is otherwise subject to) and complies with an agreement with the U.S. government, or a FATCA Agreement, or (ii) complies with applicable foreign law enacted in connection with an intergovernmental agreement between the United States and a foreign jurisdiction (an "IGA"). In either case, subject to certain exemptions, such institution, among other things, will be required to collect and provide to the United States or other relevant tax authorities certain information regarding U.S. account holders of such institution. In the case of payments made to a foreign entity that is not a foreign financial institution (as a beneficial owner), the withholding tax generally will be imposed, subject to certain exceptions, unless such foreign entity provides the withholding agent with a certification that it does not have any "substantial U.S. owner" (generally, any specified U.S. person that directly or indirectly owns more than a specified percentage of such entity) or that identifies its substantial U.S. owners. FATCA Agreements and implementing rules may alter the general description above.

Prospective investors should consult their own tax advisors regarding the possible impact of these rules on their investment in our common stock, and the entities through which they hold our common stock, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of this 30% withholding tax under FATCA.

Backup withholding and information reporting

In general, information reporting will apply to distributions on our common stock paid to a Non- U.S. Holder and the tax withheld, if any, with respect to the distributions. Non-U.S. Holders may have to comply with specific certification procedures to establish that the holder is not a United States person (as defined in the Internal Revenue Code) in order to avoid backup withholding at the then applicable rate with respect to dividends on our common stock. Dividends paid to Non- U.S. Holders subject to the U.S. withholding tax, as described above under the section titled "—Distributions on Our Common Stock," generally will be exempt from U.S. backup withholding.

Information reporting and backup withholding will generally apply to the proceeds of a disposition of our common stock by a Non-U.S. Holder effected by or through the U.S. office of any broker, whether U.S. or foreign, unless the holder certifies its status as a Non-U.S. Holder and satisfies certain other requirements, or otherwise establishes an exemption. Generally, information reporting and backup withholding will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the United States through a non-U.S. office of a broker. However, for information reporting purposes,

dispositions effected through a non-U.S. office of a U.S. broker or a foreign broker with substantial U.S. ownership or operations generally will be treated in a manner similar to dispositions effected through a U.S. office of a broker. Prospective investors should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Copies of information returns may be made available to the tax authorities of the country in which the Non-U.S. Holder resides or in which the Non-U.S. Holder is incorporated, under the provisions of a specific treaty or agreement.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a Non-U.S. Holder can be refunded or credited against the Non-U.S. Holder's U.S. federal income tax liability, if any, provided that an appropriate claim is timely filed with the IRS.

Federal estate tax

Common stock owned (or treated as owned) by an individual who is not a citizen or a resident of the United States (as defined for U.S. federal estate tax purposes) at the time of death will be included in the individual's gross estate for U.S. federal estate tax purposes unless an applicable estate or other tax treaty provides otherwise, and therefore, may be subject to U.S. federal estate tax.

Underwriting

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, Cowen and Company, LLC and Leerink Partners LLC are acting as joint book-running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of shares
J.P. Morgan Securities LLC	
Cowen and Company, LLC	
Leerink Partners LLC	
Wedbush Securities Inc.	
Total	5,000,000

The underwriters are committed to purchase all the shares of common stock offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the shares of common stock directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to $ per share from the initial public offering price. After the initial offering of the shares to the public, the offering price and other selling terms may be changed by the underwriters. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to 750,000 additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

Certain of our existing stockholders, New Enterprise Associates, Pfizer Inc. and Takeda Pharmaceutical Company Limited, have indicated an interest in purchasing, in aggregate, up to approximately $30 million in shares of our common stock in this offering at the initial public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters could determine to sell more, fewer or no shares to any of these potential investors, and any of these potential investors could determine to purchase more, fewer or no shares in this offering. The number of shares of our common stock available for sale to the general public in this offering will be reduced to the extent these investors purchase any such shares. Any shares not so purchased will be offered by the underwriters to the general public on the same basis as other shares offered pursuant to this prospectus.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option to purchase additional shares exercise	With full option to purchase additional shares exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $3.0 million. We have agreed to reimburse the underwriters for expenses relating to the clearance of this offering with the Financial Industry Regulatory Authority up to $35,000. The underwriters have agreed to reimburse us for up to $ in out-of-pocket expenses incurred in connection with this offering.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise dispose of, directly or indirectly, or file with the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC, Cowen and Company, LLC and Leerink Partners LLC for a period of 180 days after the date of this prospectus.

Our directors and executive officers, and certain of our significant shareholders have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 180 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities LLC, Cowen and Company, LLC and Leerink Partners LLC, (1) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including, without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers, managers and members in accordance with the rules and regulations

of the SEC and securities which may be issued upon exercise of a stock option or warrant) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

We will apply to have our common stock approved for listing/quotation on The NASDAQ Global Market under the symbol ''MRSN.''

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be ''covered'' shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be ''naked'' shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act of 1933, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the The NASDAQ Global Market, in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In

determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common stock, or that the shares will trade in the public market at or above the initial public offering price.

Selling restrictions

General

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

European economic area

In relation to each Member State of the European Economic Area (each, a "Relevant Member State"), no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B. to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares shall require the Company or the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a "qualified investor" within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive. In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

The Company, the representatives and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

This prospectus has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus may only do so in circumstances in which no obligation arises for the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the underwriters to publish a prospectus for such offer.

For the purpose of the above provisions, the expression "an offer to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the

extent implemented in the Relevant Member States) and includes any relevant implementing measure in the Relevant Member State and the expression ''2010 PD Amending Directive'' means Directive 2010/73/EU.

United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are ''qualified investors'' (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Order, and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as ''relevant persons'').

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Other relationships

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

Legal matters

The validity of the issuance of our common stock offered in this prospectus will be passed upon for us by Ropes & Gray LLP, Boston, Massachusetts. Certain legal matters in connection with this offering will be passed upon for the underwriters by Davis Polk & Wardwell LLP, New York, New York.

Experts

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements at December 31, 2016 and December 31, 2015 and for each of the years then ended, as set forth in their report. We have included our financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

Where you can find more information

We have filed with the SEC a registration statement on Form S-1, including exhibits and schedules, under the Securities Act that registers the shares of our common stock to be sold in this offering. This prospectus, which constitutes a part of the registration statement, does not contain all the information contained in the registration statement and the exhibits and schedules filed as part of the registration statement. For further information with respect to us and our common stock, we refer you to the registration statement and the exhibits and schedules filed as part of the registration statement. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, we refer you to the copies of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit.

Upon the consummation of this offering, we will file annual, quarterly and current reports, proxy statements and other information with the SEC under the Exchange Act. You can read our SEC filings, including the registration statement, at the SEC's website at www.sec.gov.

You may read and copy this information at the SEC's Public Reference Room at 100 F Street, N.E., Washington D.C. 20549, at prescribed rates. You may obtain information regarding the operation of the public reference room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a website (http://www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Our website address is www.mersana.com. The information contained in, and that can be accessed through, our website is not incorporated into and is not part of this prospectus.

Mersana Therapeutics, Inc.

Index to consolidated financial statements

Report of independent registered public accounting firm

The Board of Directors and Shareholders of Mersana Therapeutics, Inc.

We have audited the accompanying consolidated balance sheets of Mersana Therapeutics, Inc. as of December 31, 2015 and 2016, and the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' (deficit) equity and cash flows for each of the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Mersana Therapeutics, Inc. at December 31, 2015 and 2016, and the consolidated results of their operations and their cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 17, 2017,
except for Note 14
as to which the date is June 15, 2017

Mersana Therapeutics, Inc.
Consolidated balance sheets
(in thousands, except share and per share data)

	December 31,		March 31,	Pro forma March 31,
	2015	2016	2017	2017
			(unaudited)	(unaudited)
Assets				
Current assets:				
Cash and cash equivalents	$ 11,534	$100,297	$ 88,515	$ 88,515
Accounts receivable	640	1,051	712	712
Prepaid expenses and other current assets	580	825	1,334	1,334
Total current assets	12,754	102,173	90,561	90,561
Property and equipment, net	1,284	2,483	2,485	2,485
Other assets	371	431	1,961	1,961
Total assets	$ 14,409	$105,087	$ 95,007	$ 95,007
Liabilities, convertible preferred stock and stockholders' (deficit) equity				
Current liabilities:				
Accounts payable	2,025	2,068	1,801	1,801
Accrued expenses	1,656	3,428	3,971	3,971
Deferred rent	–	159	181	181
Deferred revenue	7,054	22,731	26,946	26,946
Total current liabilities	10,735	28,386	32,899	32,899
Deferred rent, net of current portion	–	299	249	249
Deferred revenue, net of current portion	10,070	37,571	30,721	30,721
Commitments (Note 12)				
Series A-1 convertible preferred stock, $0.0001 par value: 25,085,153 shares authorized; 25,085,153, 25,085,153, 25,085,153 and no shares issued and outstanding at December 31, 2015, December 31, 2016, March 31, 2017 (unaudited) and March 31, 2017 pro forma (unaudited), respectively (liquidation preference of $26,999 at December 31, 2016 and March 31, 2017 (unaudited))	26,336	26,336	26,336	–
Series B-1 convertible preferred stock, $0.0001 par value: 32,936,919 shares authorized; 9,410,551, 32,936,919, 32,936,919 and no shares issued and outstanding at December 31, 2015, December 31, 2016, March 31, 2017 (unaudited) and March 31, 2017 pro forma (unaudited), respectively (liquidation preference of $35,450 at December 31, 2016 and March 31, 2017 (unaudited))	9,960	35,232	35,232	–
Series C-1 convertible preferred stock, $0.0001 par value: no shares, 14,674,062 shares and 14,674,062 shares authorized at December 31, 2015 and 2016 and March 31, 2017 (unaudited), respectively; no shares, 14,674,062, 14,674,062 and no shares issued and outstanding at December 31, 2015, December 31, 2016, March 31, 2017 (unaudited) and March 31, 2017 pro forma (unaudited), respectively (liquidation preference of $33,100 at December 31, 2016 and March 31, 2017 (unaudited))	–	32,882	32,882	–
Stockholders' (deficit) equity:				
Common stock, $0.0001 par value; 75,500,000, 95,000,000 and 96,500,000 shares authorized at December 31, 2015, December 31, 2016 and March 31, 2017 (unaudited), respectively; 1,223,457, 1,294,352, 1,356,211 and 17,510,882 shares issued and outstanding at December 31, 2015, March 31, 2017 (unaudited) and March 31, 2017 (unaudited) pro forma, respectively	1	1	1	3
Additional paid-in capital	2,778	3,551	3,919	98,367
Accumulated deficit	(45,471)	(59,171)	(67,232)	(67,232)
Total stockholders' (deficit) equity	(42,692)	(55,619)	(63,312)	31,138
Total liabilities, convertible preferred stock, and stockholders' (deficit) equity	$ 14,409	$105,087	$ 95,007	$ 95,007

Mersana Therapeutics, Inc.
Consolidated statements of operations and comprehensive loss (in thousands, except per share data)

	Year ended December 31,		Three months ended March 31,	
	2015	2016	2016	2017
			(unaudited)	(unaudited)
Collaboration revenue	$ 10,359	$ 25,171	$ 3,697	$ 4,290
Operating expenses:				
Research and development	21,353	32,008	7,436	10,106
General and administrative	5,347	6,984	1,621	2,296
Total operating expenses	26,700	38,992	9,057	12,402
Other income (expense):				
Other income (expense)	(89)	—	—	—
Interest income	2	121	4	51
Total other income (expense)	(87)	121	4	51
Net loss	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Comprehensive loss	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Net loss attributable to common stockholders	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Net loss per share attributable to common stockholders—basic and diluted	$ (13.43)	$ (10.82)	$ (4.31)	$ (6.02)
Weighted-average number of common shares used in net loss per share attributable to common stockholders—basic and diluted	1,223,457	1,266,758	1,242,993	1,338,475
Pro forma net loss per share attributable to common stockholders—basic and diluted (unaudited)		$ (1.01)		$ (0.46)
Pro forma weighted average number of common shares used in net loss per share attributable to common stockholders—basic and diluted (unaudited)		13,585,523		17,493,146

Mersana Therapeutics, Inc.
Consolidated statements of convertible preferred stock and stockholders' (deficit) equity
(in thousands, except share and per share data)

	Series A-1 convertible preferred stock		Series B-1 convertible preferred stock		Series C-1 convertible preferred stock		Common stock		Additional paid-in capital	Accumulated deficit	Stockholders' (deficit) equity
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at December 31, 2014	25,085,153	$ 26,336	–	$ –	–	$ –	1,223,457	$ 1	$ 2,429	$(29,043)	$ (26,613)
Issuance of Series B-1 convertible preferred stock, net of issuance costs of $168	–	–	9,410,551	9,960	–	–	–	–	–	–	–
Stock-based compensation expense	–	–	–	–	–	–	–	–	349	–	349
Net loss	–	–	–	–	–	–	–	–	–	(16,428)	(16,428)
Balance at December 31, 2015	25,085,153	$ 26,336	9,410,551	$ 9,960	–	$ –	1,223,457	$ 1	$ 2,778	$ (45,471)	$(42,692)
Issuance of Series B-1 convertible preferred stock, net of issuance costs of $50	–	–	23,526,368	25,272	–	–	–	–	–	–	–
Issuance of Series C-1 convertible preferred stock, net of issuance costs of $218	–	–	–	–	14,674,062	32,882	–	–	–	–	–
Exercise of stock options	–	–	–	–	–	–	70,895	–	105	–	105
Stock-based compensation expense	–	–	–	–	–	–	–	–	668	–	668
Net loss	–	–	–	–	–	–	–	–	–	(13,700)	(13,700)
Balance at December 31, 2016	25,085,153	$ 26,336	32,936,919	$ 35,232	14,674,062	$ 32,882	1,294,352	$ 1	$ 3,551	$ (59,171)	$ (55,619)
Exercise of stock options	–	–	–	–	–	–	61,859	–	104	–	104
Stock-based compensation expense	–	–	–	–	–	–	–	–	264	–	264
Net loss	–	–	–	–	–	–	–	–	–	(8,061)	(8,061)
Balance at March 31, 2017 (unaudited)	25,085,153	$ 26,336	32,936,919	$ 35,232	14,674,062	$ 32,882	1,356,211	$ 1	$ 3,919	$ (67,232)	$ (63,312)
Conversion of preferred stock into common stock (unaudited)	(25,085,153)	(26,336)	(32,936,919)	(35,232)	(14,674,062)	(32,882)	16,154,671	2	94,448	–	94,450
Balance at March 31, 2017 pro forma (unaudited)	–	$ –	–	$ –	–	$ –	17,510,882	$ 3	$98,367	$ (67,232)	$ 31,138

Mersana Therapeutics, Inc.
Consolidated statements of cash flows
(in thousands)

	Year ended December 31,		Three months ended March 31,	
	2015	2016	2016	2017
			(unaudited)	(unaudited)
Cash flows from operating activities				
Net loss	$ (16,428)	$ (13,700)	$ (5,356)	$ (8,061)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:				
Depreciation	297	655	115	209
Stock-based compensation	349	668	109	264
Change in deferred rent	–	102	292	(28)
Changes in operating assets and liabilities:				
Accounts receivable	1,197	(411)	(15)	339
Prepaid expenses and other current assets	(240)	(245)	(248)	(509)
Other assets	–	(60)	–	(1,025)
Accounts payable	926	(325)	(159)	(53)
Accrued expenses	544	1,726	(60)	589
Deferred revenue	3,719	43,178	37,393	(2,635)
Net cash (used in) provided by operating activities	(9,636)	31,588	32,071	(10,910)
Cash flows from investing activities				
Change in restricted cash	(164)	–	–	–
Purchase of property and equipment	(619)	(1,084)	(395)	(471)
Net cash used in investing activities	(783)	(1,084)	(395)	(471)
Cash flows from financing activities				
Proceeds from sale of Series B-1 convertible preferred stock, net of issuance costs	9,960	25,272	–	–
Proceeds from sale of Series C-1 convertible preferred stock, net of issuance costs	–	32,882	–	–
Proceeds from exercise of stock options	–	105	31	104
Payments of initial public offering costs	–	–	–	(505)
Net cash provided by (used in) financing activities	9,960	58,259	31	(401)
Increase (decrease) in cash and cash equivalents	(459)	88,763	31,707	(11,782)
Cash and cash equivalents, beginning of period	11,993	11,534	11,534	100,297
Cash and cash equivalents, end of period	$ 11,534	$ 100,297	$ 43,241	$ 88,515
Supplemental disclosures of non-cash activities:				
Purchases of property and equipment included in accounts payable	$ –	$ 368	$ 207	$ 154
Purchases of property and equipment included in accrued expenses	$ –	$ 46	$ –	$ –
Purchases of property and equipment reimbursed by landlord	$ –	$ 356	$ –	$ –

Mersana Therapeutics, Inc.
Notes to consolidated financial statements
(Information as of March 31, 2017 and for the three months ended March 31, 2016 and 2017 is unaudited)

1. Nature of business and basis of presentation

Nature of business

Mersana Therapeutics, Inc. (the ''Company'') is a privately held clinical stage company located in Cambridge, Massachusetts.

The Company is advancing a proprietary pipeline of targeted oncology therapeutics leveraging its Dolaflexin® antibody drug conjugate platform. Mersana's first product candidate, XMT-1522, is designed to address a much broader population of patients with HER2-expressing tumors than served by currently approved HER2 therapies. Mersana also has strategic partnerships utilizing the Dolaflexin platform with multiple strategic partners.

Risks and uncertainties

The Company is subject to risks common to companies in the biotechnology industry, including but not limited to, risks of failure of preclinical studies and clinical trials, the need to obtain marketing approval for any drug product candidate that it may identify and develop, the need to successfully commercialize and gain market acceptance of its product candidates, dependence on key personnel, protection of proprietary technology, compliance with government regulations, development by competitors of technological innovations, reliance on third party manufacturers and ability to transition from pilot-scale manufacturing to large-scale production of products.

Liquidity

The Company has an accumulated deficit of $67.2 million at March 31, 2017, and will require substantial additional capital to fund operations. The future success of the Company is dependent on its ability to identify and develop its product candidates, and ultimately upon its ability to attain profitable operations. At March 31, 2017, the Company had $88.5 million of unrestricted cash and cash equivalents.

The Company believes its cash and cash equivalents as of March 31, 2017 will be sufficient to fund the Company's operating plan for a period of at least one year from the issuance date of the financial statements. Thereafter, the Company will be required to obtain additional funding. The Company intends to pursue a public offering of its common stock to fund future operations. If the Company is unable to complete a sufficient public offering in a timely manner, it would need to pursue other financing alternatives, such as private financing of debt or equity or collaboration agreements. There can be no assurances, however, that the current operating plan will be achieved or that additional funding will be available on terms acceptable to the Company, or at all.

Basis of presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (''GAAP''). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States generally accepted accounting principles as found in the Accounting Standard Codification (''ASC'') and Accounting Standards Updates (''ASU'') of the Financial Accounting Standards Board (''FASB'').

2. Summary of significant accounting policies

Principles of consolidation

The accompanying consolidated financial statements include those of the Company and its subsidiary, Mersana Securities Corp., which was established in December 2016. All intercompany balances and transactions have been eliminated.

Use of estimates

The preparation of the Company's consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, equity, revenue, expenses and related disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenue and expenses during the reporting period. On an ongoing basis, the Company's management evaluates its estimates, which include but are not limited to the management's judgments of separate units of accounting and best estimate of selling price of those units of accounting within its revenue arrangements, accrued expenses, valuation of stock-based awards and income taxes. Actual results could differ from those estimates.

The Company utilizes significant estimates and assumptions in determining the fair value of its common stock. The Company has utilized various valuation methodologies in accordance with the framework of the American Institute of Certified Public Accountants Technical Practice Aid, *Valuation of Privately-Held Company Equity Securities Issued as Compensation*, the Practice Aid, to estimate the fair value of its common stock. Each valuation methodology includes estimates and assumptions that require the Company's judgment. These estimates and assumptions include a number of objective and subjective factors, including external market conditions, the prices at which the Company sold shares of preferred stock, the superior rights and preferences of securities senior to the Company's common stock at the time of, and the likelihood of, achieving a liquidity event, such as an initial public offering or sale. Significant changes to the key assumptions used in the valuations could result in different fair values of common stock at each valuation date.

Unaudited interim financial information

The accompanying consolidated balance sheet as of March 31, 2017, the consolidated statements of operations and comprehensive loss and of cash flows for the three months ended March 31, 2016 and 2017, and the consolidated statement of convertible preferred stock and stockholders' (deficit) equity for the three months ended March 31, 2017 are unaudited. The unaudited interim financial statements have been prepared on the same basis as the audited annual financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of March 31, 2017 and the results of its operations and its cash flows for the three months ended March 31, 2016 and 2017. The financial data and other information disclosed in these notes related to the three months ended March 31, 2016 and 2017 are unaudited. The results for the three months ended March 31, 2017 are not necessarily indicative of results to be expected for the year ending December 31, 2017, any other interim periods, or any future year or period.

Pro forma financial information

On February 24, 2017, the Company's board of directors authorized the management of the Company to submit on a confidential basis a registration statement with the Securities and Exchange Commission (''SEC'') for the Company to sell shares of its common stock to the public. Upon the closing of a qualified initial public offering, all of the Company's outstanding convertible preferred stock will automatically convert into common stock. The unaudited pro forma consolidated balance sheet and the unaudited statement of convertible preferred stock and stockholders' (deficit) equity as of March 31, 2017 assume the conversion of all outstanding convertible preferred stock into shares of common stock upon the completion of this proposed offering.

Research and development

The Company expenses all costs incurred in performing research and development activities. Research and development expenses include salaries and benefits, materials and supplies, preclinical expenses, manufacturing expenses, stock-based compensation expense, depreciation of equipment, contract services and other outside expenses. Costs of certain development activities, such as manufacturing, are recognized based on an evaluation of the progress to completion of specific tasks. Payments for these activities are based on the terms of the individual arrangements, which may differ from the pattern of costs incurred, and are reflected in the financial statements as prepaid or accrued research and development costs. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are delivered or the services are performed. Costs associated with collaboration agreements are included in research and development expense.

Revenue recognition

The Company recognizes revenue from collaboration arrangements in accordance with FASB ASC Topic 605, *Revenue Recognition* (ASC 605). Accordingly, revenue is recognized when all of the following criteria are met:

- Persuasive evidence of an arrangement exists;
- Delivery has occurred or services have been rendered;
- The seller's price to the buyer is fixed or determinable; and
- Collectibility is reasonably assured.

Amounts received prior to satisfying the revenue recognition criteria are recorded as deferred revenue in the consolidated balance sheets. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current liabilities. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as deferred revenue, net of current portion.

Multiple element arrangements

The Company analyzes its strategic partnerships that include multiple element arrangements based on the guidance in FASB ASC Topic 605-25, *Revenue Recognition—Multiple Element Arrangements*, or ASC 605-25.

Pursuant to the guidance in ASC 605-25, the Company evaluates multiple element arrangements to determine i) the deliverables included in the arrangement and ii) whether the individual deliverables represent separate units of accounting or whether they must be accounted for as a combined unit of accounting. This evaluation requires subjective determinations and requires management to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. Deliverables are considered separate units of accounting provided that: (i) the delivered item(s) has value to the customer on a stand-alone basis and (ii) the arrangement includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in the Company's control. In assessing whether an item has stand-alone value, the Company considers factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. In addition, the Company considers whether the collaboration partner can use the deliverable(s) for their intended purpose without the receipt of the remaining element(s), whether the value of the deliverable is dependent on the undelivered item(s) and whether there are other vendors that can provide the undelivered element(s).

Options are considered substantive if, at the inception of the arrangement, the Company is at risk as to whether the collaboration partner will choose to exercise the option. Factors that the Company considers in evaluating whether an option is substantive include the cost to exercise the option, the overall objective of the arrangement, the benefit the collaborator might obtain from the arrangement without exercising the option and the likelihood the option will be exercised. When an option is considered substantive, the Company does not consider the option or item underlying the option to be a deliverable at the inception of the arrangement and the associated option fees are not included in the allocable consideration, assuming the option is not priced at a significant and incremental discount. Conversely, when an option is not considered substantive, the Company would consider the option including other deliverables contingent upon the exercise of the option, to be a deliverable at the inception of the arrangement and a corresponding amount would be included in the allocable arrangement consideration. Notwithstanding whether the option is considered substantive or non-substantive, if the price of the option includes a significant incremental discount, the discount would be included as a deliverable at the inception of the arrangement.

Allocation of arrangement consideration

Arrangement consideration that is fixed or determinable is allocated among the separate units of accounting using the relative selling price method. Then, the applicable revenue recognition criteria in ASC 605-25 are applied to each of the separate units of accounting in determining the appropriate period and pattern of recognition. The Company determines the selling price of a unit of accounting following the hierarchy of evidence prescribed by ASC 605-25. Accordingly, the Company determines the estimated selling price for units of accounting within each arrangement using vendor-specific objective evidence (VSOE) of selling price, if available, third-party evidence (TPE) of selling price if VSOE is not available, or best estimate of selling price (BESP) if neither VSOE nor TPE is available. The Company typically uses BESP to estimate the selling price, since it generally does not have VSOE or TPE of selling price for its units of accounting. Determining the BESP for a unit of accounting requires significant judgment. In developing the

BESP for a unit of accounting, the Company considers applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. The Company validates the BESP for units of accounting by evaluating whether changes in the key assumptions used to determine the BESP will have a significant effect on the allocation of arrangement consideration between multiple units of accounting.

Pattern of recognition

The Company recognizes arrangement consideration allocated to each unit of accounting when all of the revenue recognition criteria in ASC 605 are satisfied for that particular unit of accounting. Deliverables under collaboration agreements generally consist of licenses and research and development services. License revenue is recognized when the license is delivered when it is determined to have stand-alone value from the undelivered elements of the arrangement. If the license does not have stand-alone value, the amounts allocated to the license will be combined with the related undelivered items as a single unit of accounting. The revenue recognition of a combined unit of accounting typically follows the pattern of revenue of the last delivered item in the combined accounting unit.

The Company recognizes the amounts associated with research and development services and other service related deliverables over the associated period of performance. If there is no discernable pattern of performance or objectively measureable performance measures do not exist, then the Company recognizes revenue under the arrangement on a straight-line basis over the period the Company is expected to complete its performance obligations. Conversely, if the pattern of performance in which the service is provided to the customer can be determined and objectively measurable performance exists, then the Company recognizes revenue under the arrangement using the proportional performance method.

The Company recognizes revenue associated with license options upon exercise of the option, if the underlying license has standalone value from the other deliverables to be provided subsequent to delivery of the license. If the license does not have standalone value, the amounts allocated to the license option will be combined with the related undelivered items as a single unit of accounting.

Revenue recognized is limited to the lesser of the cumulative amount of payments received or the cumulative revenue earned determined using the straight-line method or proportional performance, as applicable, as of the period end date.

Recognition of milestones and royalties

At the inception of each arrangement that includes milestone payments, the Company evaluates whether each milestone is substantive and at-risk. This evaluation includes an assessment of whether (a) the consideration is commensurate with either (1) the entity's performance to achieve the milestone, or (2) the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting at least in part from the entity's performance to achieve the milestone, (b) the consideration relates solely to past performance, and (c) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. The Company evaluates factors such as the scientific, regulatory, commercial, and other risks that must be overcome to achieve the respective milestone, the level of effort and investment

required to achieve the respective milestone, and whether the milestone consideration is reasonable relative to all deliverables and payment terms in the arrangement in making this assessment. On the milestone achievement date, assuming all other revenue recognition criteria are met and the milestone is deemed substantive and at-risk, the Company recognizes the payment as collaboration revenue. For milestones that are not deemed substantive and at-risk, where payment is reasonably assured, the Company recognizes the milestone payment over the remaining service period.

The Company will recognize royalty revenue, if any, in the period of sale of the related product(s), based on the underlying contract terms, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, assuming all other revenue recognition criteria are met.

Collaborative arrangements

The Company records the elements of its collaboration agreements that represent joint operating activities in accordance with ASC Topic 808, *Collaborative Arrangements* (ASC 808). Accordingly, the elements of the collaboration agreements that represent activities in which both parties are active participants and to which both parties are exposed to the significant risks and rewards that are dependent on the commercial success of the activities, are recorded as collaborative arrangements. The Company considers the guidance in ASC Topic 605-45, *Revenue Recognition—Principal Agent Considerations* (ASC 605-45) in determining the appropriate treatment for the transactions between the Company and its collaborative partner and the transactions between the Company and third parties. Generally, the classification of transactions under the collaborative arrangements is determined based on the nature and contractual terms of the arrangement along with the nature of the operations of the participants. To the extent revenue is generated from a collaboration, the Company will recognize its share of the net sales on a gross basis if it is deemed to be the principal in the transactions with customers, or on a net basis if it is instead deemed to be the agent in the transactions with customers, consistent with the guidance in ASC 605-45.

Fair value measurements

Fair value is defined as the price that would be received upon sale of an asset or paid to transfer a liability between market participants at measurement dates. ASC Topic 820 *Fair Value Measurement* (“ASC 820”), establishes a three-level valuation hierarchy for instruments measured at fair value. The hierarchy is based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows:

Level 1—Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2—Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

Level 3—Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

Cash and cash equivalents

The Company considers all highly liquid investments with an original maturity, or a remaining maturity at the time of purchase, of three months or less to be cash equivalents. The Company invests excess cash primarily in money market funds which are highly liquid and have strong credit ratings. These investments are subject to minimal credit and market risks. Cash and cash equivalents are stated at cost, which approximates market value.

Restricted cash

Restricted cash of $371 is recorded in other non-current assets as of December 31, 2015 and 2016 and March 31, 2017 and includes amounts held as security deposits for a standby letter of credit related to a facility lease and a corporate credit card program. Changes in restricted cash are recorded as cash flows from investing activities in the accompanying consolidated statements of cash flows.

Property and equipment

Property and equipment is stated at cost, less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful life of each asset as follows:

Computer equipment, office equipment and software	3 years
Laboratory equipment	5 years
Leasehold improvements	Shorter of useful life or life of lease

Upon retirement or sale, the cost of the assets disposed of and the related accumulated depreciation are eliminated from the balance sheet and related gains or losses are reflected in the statement of operations. There were no material retirements or sales of assets during the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017.

The Company reviews its property and equipment for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. If an impairment review is performed to evaluate an asset for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the asset to its carrying value. If the carrying amount of the asset exceeds its estimated undiscounted future net cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. The Company did not recognize impairment charges during the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017.

Repairs and maintenance costs are expensed as incurred and costs of significant improvements are capitalized.

Deferred initial public offering costs

The Company capitalizes deferred initial public offering (IPO) costs, which primarily consist of direct, incremental legal and accounting fees relating to the Company's initial public offering, within other non-current assets. The deferred IPO costs will be offset against IPO proceeds upon the consummation of

an offering. As of December 31, 2016 and March 31, 2017, $60 and $1,589 of deferred issuance costs were incurred and capitalized.

Patent costs

The Company expenses patent application and related legal costs as incurred and classifies such costs as general and administrative expenses in the accompanying consolidated statements of operations.

Accounting for stock-based compensation

The Company accounts for its stock-based compensation in accordance with ASC Topic 718 Compensation—*Stock Compensation* ("ASC 718"). ASC 718 requires all stock-based payments to employees and directors to be recognized as expense in the statements of operations based on their grant date fair values. Expense related to stock awards to non-employees is required to be recognized in the statement of operations based on the awards' vesting date fair values. The Company estimates the fair value of options granted using the Black-Scholes option pricing model.

The Black-Scholes option pricing model requires inputs based on certain subjective assumptions, including (a) the expected stock price volatility, (b) the calculation of expected term of the award, (c) the risk-free interest rate and (d) expected dividends. Due to the lack of a public market for the Company's common stock and a lack of company-specific historical and implied volatility data, the Company has based its estimate of expected volatility on the historical volatility of a group of similar companies that are publicly traded. The historical volatility is calculated based on a period of time commensurate with the expected term assumption. The computation of expected volatility is based on the historical volatility of a representative group of companies with similar characteristics to the Company, including stage of product development and life science industry focus. The Company uses the simplified method as prescribed by the SEC Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees as it does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. For options granted to non-employees, the Company utilizes the contractual term of the arrangement as the basis for the expected term assumption. The risk-free interest rate is based on a treasury instrument whose term is consistent with the expected term of the stock options. The expected dividend yield is assumed to be zero as the Company has never paid dividends and has no current plans to pay any dividends on its common stock.

There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These estimates and assumptions include a number of objective and subjective factors, including external market conditions, the prices at which the Company sold shares of preferred stock, the superior rights and preferences of securities senior to its common stock at the time of, and the likelihood of, achieving a liquidity event, such as an IPO or sale. Significant changes to the key assumptions used in the valuations could result in different fair values of common stock at each valuation date.

In the first quarter of 2017, the Company made an accounting policy election to recognize forfeitures as they occur upon adoption of guidance per ASU No. 2016-09. The adoption of this ASU did not have a material impact on the Company's financial statements. In reporting periods prior to 2017, the Company

estimated forfeitures at the time of grant and revised in subsequent periods as necessary if actual forfeitures differed form estimates.

Through December 31, 2016, the Company was required to estimate forfeitures at the time of grants to employees, and revise those estimates in subsequent periods if actual forfeitures differ from its estimates. The Company used historical data to estimate pre-vesting forfeitures and recorded stock-based compensation expense only for those awards that were expected to vest. To the extent that actual forfeitures differ from estimates, the difference was recorded as a cumulative adjustment in the period the estimates were revised. Stock-based compensation expense recognized in the financial statements is based on awards that were ultimately expected to vest.

The fair value of stock-based payments is recognized as expense, net of estimated forfeitures, over the requisite service period which is generally the vesting period.

Income taxes

The Company accounts for income taxes using the liability method. The difference between the financial statement and tax basis of the assets and liabilities is determined annually. Deferred income tax assets and liabilities are computed using the tax laws and rates that are expected to apply for periods in which such differences reverse. Valuation allowances are established, if necessary, to reduce the deferred tax asset to the amount that will more likely than not be realized.

The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

Comprehensive income (loss)

Comprehensive income (loss) is comprised of net loss and other comprehensive loss. For the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017 comprehensive loss equals net loss.

Net loss per share

Basic net loss per common share is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of common shares outstanding during the period, without consideration for potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss attributable to common stockholders by the weighted-average number of common shares and potentially dilutive securities outstanding for the period determined using the treasury-stock and if-converted methods.

For purposes of the diluted net loss per share calculation, convertible preferred stock, warrants to purchase common stock and options to purchase common stock are considered to be potentially dilutive securities, but are excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive and therefore, basic and diluted net loss per share were the same for all periods presented.

The following table sets forth the outstanding potentially dilutive securities that have been excluded from the calculation of diluted net loss per share because to include them would be anti-dilutive (in common stock equivalent shares):

	Year ended December 31,		Three months ended March 31,	
	2015	2016	2016	2017
Series A-1 convertible preferred stock	5,574,467	5,574,467	5,574,467	5,574,467
Series B-1 convertible preferred stock	2,091,229	7,319,307	2,091,229	7,319,307
Series C-1 convertible preferred stock	—	3,260,897	—	3,260,897
Warrants	129,491	129,491	129,491	129,491
Stock options	2,146,436	2,901,985	2,113,867	3,282,849
Total	9,941,623	19,186,147	9,909,054	19,567,011

Pro forma net loss per share (unaudited)

Unaudited pro forma net loss per share attributable to common stockholders is computed using the weighted-average number of common shares outstanding after giving effect to the conversion of all the convertible preferred stock into shares of common stock as if such conversion had occurred at the beginning of the period presented or the date of original issuance, if later.

The following table summarizes the Company's unaudited pro forma net loss per share attributable to common stockholders:

	Year ended December 31, 2016	Three months ended March 31, 2017
Net loss attributable to common stockholders	$ (13,700)	$ (8,061)
Pro forma net loss	$ (13,700)	$ (8,061)
Weighted average common shares outstanding	1,266,758	1,338,475
Adjustment for assumed conversion of convertible preferred stock	12,318,765	16,154,671
Pro forma weighted average common shares outstanding—basic and diluted	13,585,523	17,493,146
Pro forma basic and diluted loss per share attributable to common stockholders	$ (1.01)	$ (0.46)

Concentration of credit risk and off-balance sheet risk

Financial instruments that subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents and accounts receivable. Substantially all of the Company's cash and cash equivalents were held at one financial institution as of December 31, 2016 and March 31, 2017. As of

December 31, 2016, accounts receivable consisted of amounts due from two collaborators. As of March 31, 2017, accounts receivable consisted of amounts due from three collaborators.

The Company did not have an allowance for doubtful accounts at December 31, 2015, December 31, 2016 or March 31, 2017.

Segment information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision-maker in deciding how to allocate resources and assess performance. The Company and the Company's chief operating decision-maker, the Company's chief executive officer, views the Company's operations and manages its business as a single operating segment, which is the business of discovering and developing antibody drug conjugates.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued a new standard, Accounting Standards Update (ASU No. 2014-09), *Revenue from Contracts with Customers*, as amended, which will supersede nearly all existing revenue recognition guidance. Under ASU No. 2014-09, an entity is required to recognize revenue upon transfer of promised goods or services to customers in an amount that reflects the expected consideration received in exchange for those goods or services. ASU No. 2014-09 defines a five-step process in order to achieve this core principle, which may require the use of judgment and estimates, and also requires expanded qualitative and quantitative disclosures relating to the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers, including significant judgments and estimates used.

The FASB has recently issued several amendments to the new standard, including clarification on accounting for licenses of intellectual property and identifying performance obligations. The amendments include ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606)—Principal versus Agent Considerations*, which was issued in March 2016, and clarifies the implementation guidance for principal versus agent considerations in ASU No. 2014-09, and ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606)—Identifying Performance Obligations and Licensing*, which was issued in April 2016, and amends the guidance in ASU No. 2014-09 related to identifying performance obligations and accounting for licenses of intellectual property.

The new standard permits adoption either by using (i) a full retrospective approach for all periods presented in the period of adoption or (ii) a modified retrospective approach with the cumulative effect of initially applying the new standard recognized at the date of initial application and providing certain additional disclosures. The new standard is effective for annual reporting periods beginning after December 15, 2017, with early adoption permitted for annual reporting periods beginning after December 15, 2016. The Company does not plan to early adopt, and accordingly, will adopt the new standard effective January 1, 2018.

The Company is considering using the modified retrospective approach; however, a final decision regarding the adoption method has not been finalized at this time. The Company's final determination will depend on

a number of factors such as the significance of the impact of the new standard on the Company's financial results and the needs of its financial statement users.

The Company is in process of initiating its overall implementation plan and evaluation of the impact of the new standard on its accounting policies. The Company has assigned internal resources and may engage third party service providers to assist in the evaluation. The new standard may have a material impact on the revenue recognition for the Company's current arrangements with Takeda and Merck KGaA.

In August 2014, the FASB issued ASU No. 2014-15, *Presentation of Financial Statements—Going Concern* (ASU No. 2014-15), which requires management to assess an entity's ability to continue as a going concern every reporting period, and provide certain disclosures if management has substantial doubt about the entity's ability to operate as a going concern, by incorporating and expanding upon certain principles that are currently in U.S. auditing standards. This guidance is effective for the annual period ending after December 15, 2016, and for annual periods and interim periods thereafter. The Company adopted ASU No. 2014-15 for the year ended December 31, 2016. The adoption of new guidance did not have a significant impact on its financial statement disclosures.

In November 2015, the FASB issued ASU No. 2015-17, *Balance Sheet Classification of Deferred Taxes* (ASU No. 2015-17), which simplifies the presentation of deferred income taxes by eliminating the need for entities to separate deferred income tax liabilities and assets into current and noncurrent amounts in a classified statement of financial position. For non-public entities, the guidance in this ASU is effective for annual periods beginning after December 15, 2017 and interim periods within annual periods beginning after December 15, 2018. Earlier application is permitted for all entities as of the beginning of an interim or an annual reporting period. The Company prospectively adopted this ASU for the year ended December 31, 2015. Prior period amounts were not retrospectively adjusted, and the adoption of this ASU did not have a material impact on the Company's consolidated balance sheets.

In February 2016, the FASB issued ASU No. 2016-02, *Leases* (ASU No. 2016-02), which will replace the existing guidance in ASC 840, Leases. The updated standard aims to increase transparency and comparability among organizations by requiring lessees to recognize lease assets and lease liabilities on the balance sheet and requiring disclosure of key information about leasing arrangements. This amendment is effective for the Company in the fiscal year beginning after December 15, 2019, but early adoption is permissible. The Company is currently evaluating the potential impact that ASU No. 2016-02 may have on its financial position and results of operations.

In March 2016, the FASB issued ASU No. 2016-09, *Compensation—Stock Compensation* (ASU No. 2016-09), which amends ASC Topic 718, Compensation—Stock Compensation. The new standard identifies areas for simplification involving several aspects of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, an option to recognize gross stock compensation expense with actual forfeitures recognized as they occur, as well as certain classifications on the consolidated statements of cash flows. The amendments are effective for annual reporting periods (including interim reporting periods within those years) beginning after December 15, 2016. The Company adopted this ASU effective January 1, 2017. The adoption of this ASU did not have a

material impact on the Company's financial statements. Upon adoption of ASU No. 2016-09, the Company accounts for forfeitures as they occur.

In October 2016, the FASB issued ASU No. 2016-18, *Restricted Cash* (''ASU No. 2016-18''), which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and restricted cash or restricted cash equivalents. Therefore, amounts described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows.
ASU No. 2016-18 is effective for fiscal years beginning after December 15, 2017, and interim periods within those years. Early adoption is permitted. The Company is evaluating the potential impact that the adoption of ASU No. 2016-18 will have on the Company's financial position or results of operations.

3. Collaboration agreements

Takeda strategic research and development partnership

In March 2014, the Company entered into a Research Collaboration and Commercial License Agreement with Takeda Pharmaceutical Company Limited (Takeda) through its wholly owned subsidiary, Millennium Pharmaceuticals, Inc. (the 2014 Agreement). The 2014 Agreement was amended in January 2015 (the 2015 Amended Agreement) and amended and restated in January 2016 (the 2016 Restated Agreement). The agreements provide Takeda with the right to develop ADCs directed to a total of seven exclusive targets over a specified period of time. Takeda will be responsible for the product development and marketing of any products resulting from this collaboration.

The 2014 Agreement was structured to allow Takeda the right to evaluate two targets upon payment of a per target technology access fee with the right to receive a development and commercialization license upon the exercise of an option with an additional payment to the Company. The 2014 Agreement also provided a limited replacement right for a target. The 2015 Amended Agreement granted Takeda the right to develop two additional targets and also gave Takeda an additional limited replacement right. The 2016 Restated Agreement provided Takeda with the right to develop three additional targets.

Under the terms of the 2014 Agreement, the Company was eligible to receive a nonrefundable technology access fee of $500 per target, payable upon designation of the target, and an option exercise fee of $1,300 per target to receive a development and commercialization license. The Company received an upfront payment of $1,150 representing the $500 technology access fee for the first designated target and a $650 nonrefundable payment creditable against the $1,300 option exercise payment for the development and commercialization license for the first designated target. In 2014, the Company also received the remaining $650 option exercise fee for the first designated target and the $500 technology access fee for the second designated target.

In connection with the 2015 Amended Agreement, the Company received a nonrefundable payment of $9,000 for the right to develop two additional targets. Takeda is required to pay $500 in order to utilize the second limited replacement right. Under the terms of the 2016 Restated Agreement, the Company

received a nonrefundable payment of $13,500 for the right to develop three additional targets, bringing the total to seven.

For all targets under the 2015 Amended Agreement and the 2016 Restated Agreement, the Company grants a research, development and commercialization license upon the designation of a target, including targets initially covered by the 2015 Amended Agreement.

Through March 31, 2017 Takeda has designated four targets and received development and commercialization licenses for the first, third and fourth designated targets. In order to receive a development and commercialization license for the second designated target, Takeda must exercise its option and make a payment of $1,300. Takeda still has three targets and the limited replacement rights for two targets available.

Under the terms of the agreements, the Company and Takeda develop research plans to evaluate Takeda's antibodies as ADCs incorporating the Company's technology. The Company receives reimbursement for its efforts under the research plans. The goal of the research plans is to provide Takeda with sufficient information to formally nominate a development candidate and begin IND-enabling studies or cease development on the designated target.

If products are successfully developed and commercialized, the Company is entitled to receive aggregate milestones of up to $1,063,300 for all seven designated targets consisting of $107,800 in development milestones, $325,000 in regulatory milestones, and $630,500 in commercial milestones. The total milestones payable on each of the first and second designated targets are $136,000 and the total milestones payable on each of the third, fourth, fifth, sixth and seventh designated target are $158,300. There are four individual development milestones per target, which are payable upon either the initiation of a GLP toxicology study or the filing of an IND application (depending upon the designated target), and the initiation of Phase 1 through Phase 3 clinical trials. There are six or eight individual regulatory milestones per target, depending on the target. These are payable upon regulatory submissions, regulatory approvals and pricing approvals, as applicable, for the U.S., European Union and Japanese markets and regulatory approvals for both a second and third indication. There are six individual commercial milestones, which are payable upon the first commercial sale in each of the U.S., European Union and Japanese markets and upon the attainment of three separate defined thresholds for annual net sales. The next potential milestone payment the Company will be eligible to receive is a development milestone of $500 related to a GLP toxicology study. The Company is also entitled to receive royalties on product sales, if any, during the applicable royalty term. Royalties payable on the first and second designated targets are in the mid single digits and royalties payable on the third, fourth, fifth, sixth and seventh designated target are in the mid to high single digits.

In connection with the 2016 Restated Agreement, the Company may elect to exercise an option to co-develop and co-commercialize one product incorporating either Takeda's third, fourth, fifth, sixth or seventh target in the United States for a payment of $15,000. If the Company elects to exercise the option to co-develop and co-commercialize a product, the Company will share in 50% of the profits related to United States. The Company will be responsible for 50% of costs incurred specifically for the United States

and 30% of global development costs. Any costs incurred specifically for a foreign country will be borne 100% by Takeda. If the Company elects to co-develop and co-commercialize a product, certain regulatory milestones and royalties related to the United States for that target would not be paid by Takeda.

Unless earlier terminated, the 2016 Restated Agreement will expire upon the expiration of the last royalty term for a product under the agreement, after which time, Takeda will have a perpetual, royalty-free license. Except with respect to the target antigen of a product for which the Company exercised its option to co-develop and co-commercialize in the United States, Takeda may terminate the 2016 Restated Agreement in its entirety or with respect to any target for convenience upon 45 days' prior written notice. Each party may terminate the 2016 Restated Agreement in its entirety upon bankruptcy or similar proceedings of the other party or upon an uncured material breach of the agreement by the other party. However, if such breach only relates to one target, the agreement may only be terminated with respect to such target.

Takeda XMT-1522 strategic partnership

In January 2016, the Company entered into a Development Collaboration and Commercial license Agreement with Takeda through its wholly owned subsidiary, Millennium Pharmaceuticals, Inc. for the development and commercialization of XMT-1522 (the XMT-1522 Agreement). Under the XMT-1522 Agreement, Takeda was granted the exclusive right to commercialize XMT-1522 outside of the United States and Canada. Under the XMT-1522 Agreement, the Company is responsible for conducting certain Phase 1 development activities for XMT-1522, including the ongoing Phase 1 clinical study, at its own expense. Takeda has the option to conduct Phase 1 development activities at its own expense within its territory. The parties will collaborate on the further development of XMT-1522 in accordance with a global development plan (Post-Phase 1 Development). The parties will share equally all clinical stage manufacturing costs and any Post-Phase 1 Development costs incurred in the performance of activities for the purpose of obtaining regulatory approval in either the United States or Canada and in certain major markets in the rest of the world. Each party will be responsible for all Post-Phase 1 Development costs incurred in the performance of activities solely for the purpose of obtaining regulatory approval in such party's territory. Each party may conduct independent development of XMT-1522, subject to certain restrictions.

The Company received an upfront payment of $26,500 upon execution of the XMT-1522 Agreement. In addition, the Company was entitled to a milestone payment of $20,000 upon achievement of the IND Clearance Date. The Company achieved the IND Clearance Date in October 2016. Accordingly, the right to credit a portion of the upfront payment lapsed and the Company received the $20,000 milestone payment in October 2016.

In addition to the milestone payment upon achievement of the IND Clearance Date, the Company is entitled to receive future development, regulatory and commercial milestones of up to $288,000 consisting of $87,000 of development milestones, $128,000 of regulatory milestones and $73,000 of commercial milestones, as well as royalties in the mid to high teens on net sales of XMT-1522 in Takeda's territory during the applicable royalty term. There are development milestones payable upon the achievement of nine separate events: the initiation of Phase 2 clinical trials and Phase 3 clinical trials for four separate

specified patient populations and the initiation of a Phase 3 clinical trial for one additional unspecified patient population. There are fourteen regulatory milestones, which are payable upon regulatory submissions, regulatory approvals and pricing approvals, as applicable, for the U.S., European Union and Japanese markets for up to four separate patient populations and multiple label indications. In addition, a regulatory milestone is payable upon the receipt of regulatory and pricing approval in two specified markets other than the United States, the European Union or Japan. There are three individual commercial milestones, which are payable upon the attainment of certain thresholds for annual net sales. The next potential milestone the Company will be eligible to receive is a development milestone of $12,000 related to the initiation of a Phase 2 clinical trial.

Under the XMT-1522 Agreement, Takeda committed to make equity investments in the Company of up to $20,000 in the aggregate in either a qualified private financing or in connection with the Company's IPO at the same price paid by the investors in the qualified private financing or the price per share in the IPO. Takeda invested approximately $10,000 in the Company's Series C-1 financing in June 2016 and has committed to invest the remaining $10,000 at the time of the Company's IPO.

The XMT-1522 Agreement expires upon the expiration of the royalty term for XMT-1522, after which time, Takeda will have a perpetual, royalty-free license. However, Takeda may terminate the XMT-1522 Agreement in its entirety for convenience upon 30 days' prior written notice at any time up to the initiation of the first Phase 2 clinical study of XMT-1522 or upon 90 days' prior written notice following the initiation of the first Phase 2 clinical study of XMT-1522. Each party may terminate the XMT-1522 Agreement in its entirety upon bankruptcy or similar proceedings of the other party and in its entirety or on a country-by-country basis upon an uncured material breach of the agreement by the other party. Following termination, XMT-1522 will revert to the Company for further development and commercialization.

Accounting analysis

In accordance with ASC 605-25, the Company identified the deliverables under the 2014 Agreement. The deliverables were determined to be (i) research license for the first designated target, (ii) exclusive development and commercialization license for the first designated target, (iii) research and development services under the research plan associated with the first designated target, (iv) replacement right for a designated target, (v) rights to future technological improvements, and (vi) providing joint research committee services. The Company determined that the option to obtain an exclusive development and commercialization license for the first designated target was not a substantive option for accounting purposes, primarily because Takeda had made an upfront nonrefundable payment of 50% of the option exercise fee. As a result, the exclusive development and commercialization license was considered a deliverable at the inception of the arrangement. In addition, the total option exercise fee of $1,300 related to the first designated target was included in the allocable consideration. Similarly, the Company concluded the option to replace a designated target was not a substantive option as there were no additional payments required in connection with the first replacement option. Conversely, the Company concluded that Takeda's ability to designate a second designated target was in substance a substantive option as the designation of an additional target was at Takeda's option and was not required to pursue the

development of the first designated target. The Company has determined that the research license for the first designated target and the research and development services under the research plan associated with the first designated target should be combined into one unit of accounting (the ''research license and related services'') as the research license does not have standalone value from the research services as the research services are required for Takeda to obtain the benefit of the research license. The Company has concluded the research license and related services have standalone value from the other units of accounting. The exclusive commercial license, replacement right for a designated target, rights to future technological improvements and joint research committee services are not required for Takeda to realize the value of the initial research license and related services.

Under the terms of the 2014 Agreement, the total arrangement consideration of $4,500 (which comprises the $500 upfront technology access payment, expected fees of $2,700 for the research services and $1,300 for the option exercise fee for the first designated target) was allocated to the units of accounting based on management's best estimate of selling price (''BESP''). The Company determined the BESP for the research license and related research services based on the estimated selling price of a research license and an estimate of the overall effort to perform the research services and an estimated market rate for research services. In developing the BESP for the exclusive development and commercialization license, the replacement rights for a designated target and the future technological improvements, the Company considered other comparable transactions, the selling price for a research license and the probability that the future technology will be developed and utilized. The BESP for the joint research committee services was developed using an estimate of the time and costs incurred to participate in the committees. The Company applied the relative selling price allocation using these BESP, which resulted in the consideration being allocated as follows: $2,790 to the research license and related service for the first designated target, $1,125 related to the commercial license on the first designated target, $450 to the replacement right for a designated target, $45 to rights to future technological improvements and $90 to joint research committee services. In addition, Takeda paid $500 in 2014 for the technology access fee and research license associated with the second designated target.

In connection with the 2015 Amended Agreement, the Company reassessed the units of accounting from the 2014 Agreement and identified incremental deliverables, resulting in the following units of accounting at the time of the 2015 Amended Agreement (i) exclusive license to the first designated target and related research services, (ii) research license to the second designated target and related research services, (iii) research license to the third designated target and related services, (iv) research license to the fourth designated target and related services, (v) replacement right to the first or second designated target, (vi) discount on the option for an exclusive development and commercialization license for the second designated target, (vii) option for exclusive development and commercialization license for the third designated target, (viii) option for an exclusive development and commercialization license for the fourth designated target, (ix) rights to future technological improvements and (x) joint research committee services. The Company concluded that the option for the exclusive development and commercialization license for the second designated target includes a significant incremental discount as the option exercise fee was at a discount to the then-current estimated selling price of an exclusive development and commercialization license for a designated target. The Company concluded the options to obtain exclusive

development and commercialization licenses for the third and fourth designated targets were not substantive options as there were no additional payments required to exercise those options. Consistent with the assessment of the units of accounting under the 2014 Agreement, the research licenses (and the exclusive commercial license as it relates to the first designated target) have been combined with the related research services under the related research plan as the license does not have standalone value from the related research services. Upon execution of the 2015 Amended Agreement the total arrangement consideration of $16,697 (which comprises the $9,000 upfront payment, expected fees of $5,776 for the research services and $1,921 of remaining deferred revenue related to the initial 2014 Agreement) was allocated to the units of accounting based on management's BESP, which were developed using consistent methodologies to the 2014 Agreement, as follows: $4,308 to the exclusive development and commercialization license to the first designated target and related research services, $1,611 to each of the research licenses and related research services for the second, third and fourth designated targets, $388 to the replacement right on the first or second designated target, $524 to the discount on the exclusive license to the second designated target, $3,105 to each of the exclusive development and commercialization licenses on the third and fourth designated targets, $262 to rights to future technological improvements and $174 to joint research committee services.

The Company has concluded that the 2016 Restated Agreement and the XMT-1522 Agreement should be accounted for as one arrangement due in part because the agreements are with the same party and were negotiated and executed contemporaneously. The Company reassessed the accounting units from the 2015 Amended Agreement and identified the additional deliverables and units of accounting. As such, the Company identified the units of accounting: (i) exclusive development and commercialization license to the first designated target and related research services, (ii) research license to the second designated target and related research services, (iii) discount on the exclusive development and commercialization license to the second designated target, (iv) exclusive development and commercialization license to the third designated target and related research services, (v) exclusive development and commercialization license to the fourth designated target and related research services, (vi) exclusive development and commercialization license to the fifth designated target and related research services (vii) exclusive development and commercialization license to the sixth designated target and related research services, (viii) exclusive development and commercialization license to the seventh designated target and related research services, (ix) first replacement right for a designated target, (x) discount on the second replacement right to a designated target, (xi) rights to future technological improvements, (xii) joint research committee services, (xiii) XMT-1522 license and related services, and (xiv) joint research committee services for XMT-1522.

Consistent with the assessment under the prior Takeda agreements, the Company has concluded that the license does not have standalone value from the research services and has accounted for each exclusive license and the related research services as a combined unit of accounting.

In addition, in assessing the additional accounting units under the XMT-1522 Agreement, the Company concluded that the license to the Company's intellectual property and the related obligations to perform services, including Phase 1 development and transfer certain materials know how related to the Company's manufacturing processes should be a combined unit of accounting. The license to the Company's intellectual property does not have standalone value from the services that the Company is obligated to perform. Takeda would not have the ability to realize the value of the license without the Company performing the related services.

The Company has concluded that the Post-Phase 1 Development activities under the XMT-1522 Agreement represent joint operating activities in which both parties are active participants and of which both parties are exposed to significant risks and rewards that are dependent on the commercial success of the activities. Accordingly, the Company is accounting for the Post-Phase 1 Development activities in accordance with ASC No. 808, *Collaborative Arrangements* (ASC 808) and they are not considered revenue elements under ASC 605-25. For the year ended December 31, 2016 and the three months ended March 31, 2017, the Company was billed approximately $340 and $294, respectively, from Takeda representing the Company's share of Post-Phase 1 Development costs incurred by Takeda. These amounts have been reflected as research and development costs in the consolidated statement of operations for the year ended December 31, 2016. The Company did not perform any Post-Phase 1 Development activities or incur any associated costs during the year ended December 31, 2016 or the three months ended March 31, 2016 or 2017.

The total allocable arrangement consideration for the 2016 Restated Agreement and the XMT-1522 Agreement was $50,089 comprised of the following: (i) nonrefundable upfront payment—$13,500, (ii) expected fees for the remaining research services—$9,515, (iii) remaining deferred revenue from the 2015 Amended Agreement—$7,498, (iv) non-creditable portion of the XMT-1522 upfront fee—$13,250, and (v) expected reimbursement for related services—$6,326.

The Company excluded from the initial allocable consideration $13,250 of the upfront fee under the XMT-1522 Agreement as it was contingent on the Company achieving IND Clearance before January 30, 2017. Upon achievement of the IND Clearance, which occurred in October 2016, the contingent consideration was included in the allocable consideration and the Company recognized the cumulative revenue that would have been recognized if the contingent consideration was included in allocable consideration at the inception of the agreements.

The allocable arrangement consideration was allocated to the units of accounting based on the relative estimated selling prices of each unit of accounting. The Company utilized BESP for each accounting unit which was developed on a basis similar to the prior Takeda agreements. The BESP for units of accounting which include a license and research services, was developed using the estimated selling price of the license and an estimate of the overall effort to perform the research service and an estimated market rate for research services. The BESP for the discounts on exclusive license, replacement rights (or discounts thereon) and rights to future technological improvements were developed based on the estimated selling prices of a license, as well as considering the probability that additional technology would be made available or the probability the counterpart would utilize the technology or exercise the option. The BESP

for the joint research committee services was developed using an estimate of the time and costs incurred to participate in the committees.

The allocable consideration was allocated to each unit of accounting as follows (i) exclusive development and commercialization license to the first designated target and related research services—$2,813, (ii) research license to the second designated target and related research services—$851, (iii) discount on the exclusive development and commercialization license to the second designated target—$345, (iv) exclusive development and commercialization license to the third designated target and related research services—$2,839, (v) exclusive development and commercialization license to the fourth designated target and related research services—$3,107, (vi) exclusive development and commercialization license to the fifth designated target and related research services—$3,107, (vii) exclusive development and commercialization license to the sixth designated target and related research services—$3,107, (viii) exclusive development and commercialization license to the seventh designated target and related research services—$3,107, (ix) first replacement right for a designated target—$2,301, (x) discount on the second replacement right to a designated target—$2,045, (xi) rights to future technological improvements—$1,151, (xii) joint research committee services—$98, (xiii) XMT-1522 license and related services—$24,920, and (xiv) XMT-1522 joint research committee services—$298.

The Company will recognize revenue related to the combined units of accounting which include research licenses or an exclusive development and commercialization license (if the license option is exercised during the research term) and the related research services, over the estimated period of the research and development services using a proportional performance model. Revenue related to discounts on options will be recognized when the option is exercised, unless there are additional research services that the Company is required to perform related to the designated target or at the time the option right lapses. Revenue related to the replacement rights will be recognized over the research term of the replacement target once the replacement right is exercised or at the time the right lapses unused. Revenue related to future technological improvements and joint research committee services will be recognized ratably over the performance period, which is expected to be ten years and six years, respectively. The Company will reassess the estimated remaining term at each subsequent reporting period.

The Company has evaluated all of the development, regulatory and commercial milestones that may be received in connection with the Takeda agreements. In evaluating if a milestone is substantive, the Company assesses whether: (i) the consideration is commensurate with either the Company's performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the Company's performance to achieve the milestone, (ii) the consideration relates solely to past performance, and (iii) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. With the exception of the $20,000 milestone payment due upon achievement of IND Clearance under the XMT-1522 Agreement, all development and regulatory milestones are considered substantive on the basis of the contingent nature of the milestone, specifically reviewing factors such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the milestone as well as the level of effort and investment required. Accordingly, such amounts will be recognized as revenue in full in the period in which the associated milestone is achieved, assuming

all other revenue recognition criteria have been met. The $20,000 milestone payment was not considered a substantive milestone as the payment was not considered commensurate with the Company's performance to achieve IND Clearance nor was solely for past performance. The $20,000 milestone payment was in substance part of the overall consideration for the license and development services the Company is required to perform under the XMT-1522 Agreement. Upon achievement of the IND Clearance, which occurred in October 2016, the contingent consideration was included in the allocable consideration and the Company recognized the cumulative revenue that would have been recognized if the contingent consideration as included in allocable consideration at the inception of the agreement. All commercial milestones will be accounted for in the same manner as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met.

The Company will recognize royalty revenue in the period of sale of the related product(s), based on the underlying contract terms, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, assuming all other revenue recognition criteria are met.

For the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, the Company recorded total revenue of $5,477, $21,401, $2,996 and $3,530, respectively, related to its efforts under the Takeda agreements. Included in accounts receivable as of December 31, 2015, December 31, 2016 and March 31, 2017 was $0, $542 and $528, respectively, related to the Takeda agreements.

As of December 31, 2016 and March 31, 2017, the Company had $52,066 and $49,788, respectively, of deferred revenue related to the Takeda agreements that will be recognized over the remaining performance period, of which amounts approximately $16,536 and $19,577, respectively, are classified as short-term.

Merck KGaA

In June 2014, the Company entered into a Collaboration and Commercial License Agreement with Merck KGaA. Upon the execution of the agreement, Merck KGaA paid the Company a nonrefundable technology access fee of $12,000 for the right to develop ADCs directed to six exclusive targets over a specified period of time. No additional fees are due when a target is designated and the commercial license to the target is granted. Merck KGaA will be responsible for the product development and marketing of any products resulting from this collaboration.

Under the terms of the agreement, the Company and Merck KGaA develop research plans to evaluate Merck KGaA's antibodies as ADCs incorporating the Company's technology. The Company receives reimbursement for its efforts under the research plans. The goal of the research plans is to provide Merck KGaA with sufficient information to formally nominate a development candidate and begin IND-enabling studies or cease development on the designated target.

In addition to the payments received for research and development activities performed on behalf of Merck KGaA, the Company is also eligible to receive up to a total of $780,000 in future milestones related to all targets under the agreement, plus low to mid single digit royalties on the commercial sales of any

resulting products during the applicable royalty term. The total milestones are categorized as follows: development milestones—$84,000; regulatory milestones—$264,000; and sales milestones—$432,000. There are six individual development milestones per target, payable upon the completion of various activities from the delivery of ADCs meeting defined specifications, through the dosing in a Phase 3 clinical trial. There are five regulatory milestones, which are payable upon regulatory approvals for a first indication in each of the U.S., European Union and Japanese markets and regulatory approvals for both a second and a third indication in the United States. There are three individual commercial milestones, which are payable upon the attainment of certain defined thresholds for annual net sales. During each of the years ended December 31, 2015 and 2016, the Company received and recognized as revenue $1,000 related to development milestones under the agreement. At the time of the execution of the agreement, there was significant uncertainty as to whether the milestones would be achieved. In consideration of this, as well as the Company's expected involvement in the research, these milestones were deemed to be substantive. The next potential milestone payment the Company will be eligible to receive will be a development milestone of $500 for the delivery of ADCs meeting product specification for the next designated targets or Merck KGaA's designation of a preclinical development candidate for any target. Revenue will be recognized upon achievement of the milestone. The Company and Merck KGaA may also enter into a future supply agreement to provide clinical study material should Merck KGaA pursue clinical development of any candidates nominated under the agreement. Through March 31, 2017, Merck KGaA has designated six targets, all of which are still covered by research plans.

Unless earlier terminated, the agreement will expire upon the expiration of the last royalty term for a product under the agreement, after which time, Merck KGaA will have a perpetual, royalty-free license, or if Merck KGaA does not designate any ADC product candidates produced by the Company under the agreement as preclinical development candidates, upon the expiration of the last to expire research program. Merck KGaA may terminate the agreement in its entirety or with respect to any target for convenience upon 60 days' prior written notice. Each party may terminate the Merck KGaA Agreement in its entirety upon bankruptcy or similar proceedings of the other party or upon an uncured material breach of the agreement by the other party. However, if such breach only relates to one target, the agreement may only be terminated with respect to such target.

In accordance with ASC 605-25, the Company identified all of the deliverables at the inception of the agreement. The deliverables were determined to be (a) commercial licenses for six designated targets, (b) research and development services for each research plan associated with a designated target, (c) rights to future technological improvements and (d) participation of project team leaders and providing joint research committee services. The commercial licenses and associated research services for each target were combined into a single unit of accounting as the research licenses do not have stand alone value without the research services.

The Company determined the BESP for the commercial license and related research services based on the estimated selling price of a commercial license and an estimate of the overall effort to perform the research services and an estimated market rate for research services. In developing the BESP for the future technological improvements, the Company considered other comparable transactions, and the

probability that the future technology will be developed and utilized. The BESP for the joint research committee services was developed using an estimate of the time and costs incurred to participate in the committees. The Company applied the relative selling price allocation using these BESPs.

The total arrangement consideration of $23,025 (which comprises the $12,000 upfront payment and expected fees of $11,025 for the research services) was allocated to the units of accounting based on management's best estimate of selling price as follows: $3,723 for each of the license and corresponding research and development services units of account; $437 for rights to future technological improvements and $248 for joint research committee services.

The Company is recognizing revenue related to the commercial license and research and development services unit of accounting over the estimated period of the research and development services using a proportional performance model based on projected Company efforts. The estimated term is 36 months from the time the target is designated until Merck KGaA makes a decision whether to nominate a preclinical development candidate or cease development efforts with respect to the designated target. Revenue related to future technological improvements and joint research committee services will be recognized ratably over the performance period, which is expected to be ten years and six years, respectively. The Company is continuing to reassess the estimated remaining term at each subsequent reporting period.

During the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, the Company recorded revenue of $4,557, $3,644, $701 and $697, respectively, related to its efforts under the collaboration agreement. Included in accounts receivable as of December 31, 2015, December 31, 2016 and March 31, 2017 was $640, $509 and $122, respectively, related to the Merck KGaA Agreement.

As of December 31, 2016 and March 31, 2017 the Company recorded $8,236 and $7,879, respectively, in deferred revenue related to the Merck KGaA agreement that will be recognized over the remaining performance period, of which amounts approximately $6,195 and $7,369, respectively, are classified as short-term.

Other Revenue

In 2015, the Company entered into a feasibility study agreement to evaluate the Company's technology. The Company satisfied its service obligations under the agreement and recognized related revenue of $325 during the year ended December 31, 2015.

In 2016, the Company entered into an agreement to provide limited services for Asana BioSciences, an existing partner, for $250. For the year ended December 31, 2016 and the three months ended March 31, 2017, the Company recorded revenue of $125 and $63, respectively, related to these services.

4. Fair value measurements

The Company's cash equivalents carried at fair value are primarily comprised of investments in a U.S. Treasury and Federal agency backed money market fund. The following table presents information about the Company's assets and liabilities regularly measured and carried at a fair value and indicates the level

within fair value hierarchy of the valuation techniques utilized to determine such value as of December 31, 2015 and 2016 and March 31, 2017:

	Fair value	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
December 31, 2015				
Cash equivalents:				
Money market funds	$6,569	$6,569	$ –	$ –

	Fair value	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
December 31, 2016				
Cash equivalents:				
Money market funds	$25,717	$25,717	$ –	$ –

	Fair value	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
March 31, 2017				
Cash equivalents:				
Money market funds	$ 84,541	$ 84,541	$ –	$ –

There were no changes in valuation techniques or transfers between fair value measurement levels during the years ended December 31, 2015 and 2016 and March 31, 2017.

5. Property and equipment

Property and equipment consists of the following:

	December 31,		March 31,
	2015	2016	2017
Laboratory equipment	$ 3,632	$ 4,672	$ 4,874
Computer equipment, office equipment and software	415	579	579
Leasehold improvements	794	1,444	1,453
Total property and equipment at cost	4,841	6,695	6,906
Less: Accumulated depreciation	(3,557)	(4,212)	(4,421)
Property and equipment	$ 1,284	$ 2,483	$ 2,485

Depreciation expense was $297, $655, $115 and $209 for the years ended December 31, 2015 and 2016 and for the three months ended March 31, 2016 and 2017, respectively.

6. Accrued expenses

Accrued expenses consist of the following:

	December 31,		March 31,
	2015	2016	2017
Accrued payroll and related expenses	$ 1,315	$2,276	$ 967
Accrued professional fees	135	402	1,593
Accrued clinical and preclinical expenses	112	602	1,348
Accrued other	94	148	63
	$1,656	$3,428	$3,971

7. Convertible preferred stock

Prior to January 1, 2015, the Company issued 25,085,153 shares of Series A-1 convertible preferred stock (Series A-1 Preferred Stock) at a purchase price of $1.0763 per share resulting in net proceeds of $26,336.

In February 2015 and June 2016, the Company issued 9,410,551 and 23,526,368 shares of Series B-1 convertible preferred stock (Series B-1 Preferred Stock) at a purchase price of $1.0763 per share resulting in net proceeds of $35,232.

Included in the terms of the Series B-1 Preferred Stock offering was a future tranche right. The Company has evaluated the right and determined that the investors' right to acquire additional shares of preferred stock is contractually embedded and not legally detachable. Such feature is not required to be bifurcated from the Series B-1 Preferred Stock as it does not meet the definition of a derivative.

In June 2016 the Company issued 14,674,062 shares of Series C-1 convertible preferred stock (Series C-1 Preferred Stock) at a purchase price of $2.25568 resulting in net proceeds of $32,882.

The Series A-1, Series B-1 and C-1 Preferred Stock have the following terms:

Voting rights

The holder of each share of Preferred Stock shall have the right to one vote for each share of common stock into which the Preferred Stock can then be converted, and such holder will have full voting rights and powers equal to those of the holders of common stock and are entitled to vote on all matters.

Dividends

The holders of Preferred Stock are entitled to receive non-cumulative dividends from the date of issuance of the Preferred Stock, at a rate of 8% per annum, if, when and as declared by the Board of Directors. To date, no dividends were declared.

Liquidation

In the event of any liquidation, dissolution, or winding-up of the Company, whether voluntary or involuntary, or any deemed liquidation event (as defined in the Company's Fourth Amended and Restated Certificate of Incorporation), the holders of outstanding shares of Series B-1 Preferred Stock and the holders of outstanding shares of Series C-1 Preferred Stock shall be entitled to be paid first out of the assets of the Company available for distribution to stockholders, on a pari passu basis and before any distribution or payment is made upon Series A-1 Preferred Stock and common stock, an amount per share equal to the sum of the original issue price plus an amount equal to the aggregate of all dividends declared but unpaid in respect of such share of Series B-1 Preferred Stock and Series C-1 Preferred Stock. Such amounts shall be paid to the holders of Series B-1 Preferred Stock and the holders of Series C-1 Preferred Stock before any payment shall be made to the holders of Series A-1 Preferred Stock or common stock or any other class or series of stock ranking on liquidation junior to Series B-1 Preferred Stock and Series C-1 Preferred Stock by reason of their ownership thereof.

If, upon a liquidation event or deemed liquidation event, the assets of the Company available for distribution shall be insufficient to make payment in full to all holders of Series B-1 Preferred Stock and all holders of Series C-1 Preferred Stock of their full Series B-1 Preferred Stock liquidation value and Series C-1 Preferred Stock liquidation value, then such assets shall be distributed among the holders of Series B-1 Preferred Stock and the holders of Series C-1 Preferred Stock at the time outstanding, ratably in proportion to the full preferential amount each such holder is otherwise entitled to receive.

After payment in accordance with the foregoing has been made in full to the holders of Series B-1 Preferred Stock and the holders of Series C-1 Preferred Stock, the holders of outstanding shares of Series A-1 Preferred Stock shall be entitled to be paid out of any remaining assets and funds of the Company available for distribution to stockholders, before any distribution or payment is made upon common stock, an amount per share of equal to the sum of the original issue price plus an amount equal to the aggregate of all dividends declared but unpaid in respect of such share of Series A-1 Preferred

Stock. Such amounts shall be paid to the holders of the Series A-1 Preferred Stock before any payment shall be made to the holders of common stock or any other class or series of stock ranking on liquidation junior to Series A-1 Preferred Stock by reason of their ownership thereof. If, upon a liquidation event or deemed liquidation event, the assets of the Company available for distribution shall be insufficient to make payment in full to all holders of Series A-1 Preferred Stock of their full Series A-1 liquidation value, then such assets shall be distributed among the holders of Series A-1 Preferred Stock at the time outstanding, ratably in proportion to the full preferential amount each such holder is otherwise entitled to receive.

After payments in accordance with the foregoing have been made in full to the holders of Preferred Stock, any remaining assets and funds of the Company available for distribution shall be distributed ratably among the holders of common stock and the holders of the Preferred Stock, on an as-if converted to common stock basis.

The original issue price for the above payments is equal to $1.0763 per share for the Series A-1 Preferred Stock and Series B-1 Preferred Stock and $2.25568 per share for the Series C-1 Preferred Stock, in each case, subject to appropriate adjustment for any stock splits, stock dividends, combination, or any other similar recapitalization affecting such shares.

Conversion

Each share of Preferred Stock is convertible, at the option of the holder, at any time after issuance into one share of common stock, subject to adjustment for stock splits and reverse stock splits (see Note 14) and dilutive issuances or deemed issuances of stock by the Company to stockholders for a lower price per share than the then-effective applicable conversion price for each series of Preferred Stock, which would cause an adjustment to the then applicable conversion price according to a customary weighted-average formula. Each share of Preferred Stock will automatically convert into shares of common stock at the then effective conversion price upon the closing of an initial public offering for which the offering price is not less than two times the original issue price of the Series C-1 Preferred Stock resulting in at least $50,000 of gross proceeds to the Company, or upon the vote or written consent of the holders of at least a majority of the outstanding shares of the Preferred Stock.

Redemption Rights

The holders of the Company's Preferred Stock do not have any rights to cause the Company to redeem any shares of Preferred Stock.

8. Stockholders' (deficit) equity

Common stock

The holders of the common stock are entitled to one vote for each share held. Common stockholders are not entitled to receive dividends, unless declared by the Board of Directors.

At December 31, 2016 and March 31, 2017 there were shares of common stock reserved for the conversion of outstanding Series A-1, Series B-1 and Series C-1 Preferred Stock and for the exercise of outstanding stock options and warrants (in common stock equivalent shares).

	December 31, 2016	March 31, 2017
Series A-1 Preferred Stock	5,574,467	5,574,467
Series B-1 Preferred Stock	7,319,307	7,319,307
Series C-1 Preferred Stock	3,260,897	3,260,897
Warrants	129,491	129,491
Stock options	2,901,985	3,282,849
Total	19,186,147	19,567,011

Warrants

In connection with a 2013 Series A-1 Preferred Stock issuance, the Company granted to certain investors warrants to purchase 129,491 shares of common stock. The warrants have a $0.05 per share exercise price and a contractual life of 10 years. The fair value of these warrants was recorded as a component of equity at the time of issuance.

9. Stock options

Stock option plan

Under the Company's 2007 Stock Incentive Plan (the "Plan"), up to 3,824,868 shares of common stock may be granted to the Company's employees, officers, directors, consultants and advisors in the form of options, restricted stock awards or other stock-based awards. During the years ended December 31, 2015 and 2016, and the three months ended March 31, 2017, the Company issued only stock option awards under the Plan. The terms of the awards are determined by the Board of Directors (the "Board"), subject to the provisions of the Plan. As of December 31, 2016 and March 31, 2017 there were 513,228 and 403,803, respectively, shares available for future issuance under the Plan.

With respect to incentive stock options, the option price per share will equal the fair market value of the common stock on the date of grant, as determined by the Board, and the vesting period is generally four years. Nonqualified stock options will be granted at an exercise price established by the Board at its sole discretion (which has not been less than fair market value on the date of grant) and the vesting periods may vary. Options granted under the Plan expire no later than 10 years from the date of grant. The Board may accelerate vesting or extend the expiration of granted options in the case of a merger, consolidation, dissolution, or liquidation of the Company.

A summary of the activity under the Plan is as follows:

	Number of shares	Weighted-average exercise price	Remaining contractual life (in years)	Aggregate intrinsic value
Options outstanding January 1, 2016	2,146,436	$1.57	8.8	$ 71
Granted	914,453	3.67		
Exercised	(70,895)	1.48		
Cancelled	(77,662)	1.95		
Forfeited	(10,347)	1.43		
Options outstanding December 31, 2016	2,901,985	$2.23	8.4	$ 8,096
Granted	442,723	6.75		
Exercised	(61,859)	1.68		
Cancelled	—	—		
Forfeited	—	—		
Options outstanding March 31, 2017	3,282,849	$2.85	8.4	$13,565
Options exercisable December 31, 2016	1,082,981	$1.68	7.5	$ 3,648
Vested and expected to vest December 31, 2016	2,811,035	$2.22	8.4	$ 7,874
Options exercisable March 31, 2017	1,199,777	$1.73	7.4	$ 6,301
Vested and expected to vest March 31, 2017	3,282,849	$2.85	8.4	$13,565

The weighted-average grant date fair value of options granted during the years ended December 31, 2015 and 2016 and the three months ended March 31, 2017, was $0.86, $2.34 and $4.23 per share, respectively. No options were granted during the three months ended March 31, 2016.

Cash received from the exercise of stock options was $0, $105, $31 and $104 for the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, respectively.

Stock-based compensation

The Company uses the provisions of ASC 718, *Stock Compensation,* to account for all stock-based awards to employees and nonemployees.

The measurement date for employee awards is generally the date of grant. Stock-based compensation expense is recognized over the requisite service period, which is generally the vesting period, using the straight-line method.

For the years ended December 31, 2015 and 2016 and for the three months ended March 31, 2016 and 2017, the Company recorded stock-based compensation expense of $349, $664, $109 and $260, respectively, related to employee grants. The Company has an aggregate of $2,485 and $4,268 of unrecognized stock compensation cost as of December 31, 2016 and March 31, 2017, respectively, remaining to be amortized over the weighted-average period of 3.4 years. The fair value of each option award is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	December 31,		March 31,
	2015	2016	2017
Risk-free interest rate	2.0%	1.5%	2.3%
Expected dividend yield	—%	—%	—%
Expected term (years)	6.25	6.25	6.25
Expected stock price volatility	61%	69%	67%

Expected volatility for the Company's common stock was determined based on the historical volatility of comparable publicly traded companies. The risk-free interest rate is based on the yield of U.S. Treasury securities with the term consistent with the expected term of the option. No dividend yield was assumed as the Company has not historically and does not expect to pay dividends on its common stock. The expected term of the options granted is based on the use of the simplified method, in which the expected term is presumed to be the mid-point between the vesting date and the end of the contractual term.

The fair value of the common stock has been determined by the Board at each date of grant based on the variety of factors, including the Company's financial position and historical financial performance, the status of developments within the Company's research and development activities, the composition and ability of the current research and management team, an evaluation of the Company's competition, the current climate in the marketplace, the illiquid nature of the common stock, the effect of the rights and preferences of the preferred shareholders, and the prospects of the liquidity event, among others.

The Company's common stock valuations were prepared using the hybrid method. The hybrid method is a hybrid between the probability-weighted expected return method ("PWERM") and the option-pricing method ("OPM"). The hybrid method estimates the probability-weighted average value across multiple scenarios using the OPM to allocated equity value within at least one of those scenarios.

The Company granted stock option awards to non-employees. Total expense during the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017 was $0, $4, $0 and $4, respectively.

10. Income taxes

For the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, the Company recorded no income tax benefit for the net operating losses incurred in each year or interim period, due to its uncertainty of realizing a benefit from those items.

A reconciliation of income taxes computed using the U.S. federal statutory rate to that reflected in operations as of December 31, 2015 and 2016 are as follows:

	2015	2016
Income tax computed at federal statutory tax rate	34.0 %	34.0 %
State taxes, net of federal benefit	5.4 %	5.1 %
Permanent differences	(0.6) %	(1.3)%
General business credits	7.3 %	12.9 %
Section 382 adjustment for net operating losses and credits	(120.1)%	– %
Other	(0.2)%	(0.1)%
Change in valuation allowance	74.2 %	(50.6)%
	– %	– %

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's net deferred tax assets as of December 31, 2015 and 2016 are as follows:

	2015	2016
Deferred tax assets:		
Net operating losses	$ 11,684	$ 9,263
Tax credit carryforwards	2,329	4,055
Deferred revenue	3,820	11,061
Licensed technology	923	856
Depreciation	226	286
Accrued expenses	85	215
Deferred expenses	–	180
Other state credits	–	75
Total deferred tax assets	19,067	25,991
Valuation allowance	(19,067)	(25,991)
Net deferred tax assets	$ –	$ –

The Company has incurred net operating losses ("NOL") since inception. At December 31, 2016, the Company had Federal and State NOL carryforwards of approximately $24,000 and $21,100, respectively, which expire at various dates through 2036. At December 31, 2016, the Company had Federal and State research and development tax credit carryforwards of approximately $3,000 and $1,700, respectively, which expire at various dates through 2036. During 2015, the Company's net operating losses and research and development tax credits decreased as a result of the Section 382 limitations.

As required by ASC 740, management of the Company has evaluated the evidence bearing upon the realizability of its deferred tax assets. Based on the weight of available evidence, both positive and negative, management has determined that it is more likely than not that the Company will not realize the benefits of these assets. Accordingly, the Company recorded a valuation allowance of $19,100 and $26,000 at December 31, 2015 and December 31, 2016, respectively. The valuation allowance increased by $6,900 in 2016, primarily as a result of change in deferred revenue during the period. The valuation allowance decreased by $12,200 in 2015 primarily because the Company determined its NOLs and research and development tax credits were limited due to changes in ownership as defined by Section 382 of the Internal Revenue Code of 1986 (Section 382).

Utilization of the NOLs and research and development tax credit carryforwards may be subject to a substantial annual limitation under Section 382 due to ownership change limitations that have occurred previously or that could occur in the future in accordance with Section 382, as well as similar state provisions. These ownership changes may limit the amount of NOLs and research and development tax credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. If a change in control as defined by Section 382 has occurred at any time since the Company's formation, utilization of its NOLs or research and development tax credit carryforwards would be subject to an annual limitation under Section 382, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate, which could then be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the NOLs or research and development tax carryforwards before their utilization. The Company has determined that ownership changes have occurred through December 31, 2016 and that certain NOLs and research and development tax credit carryforwards will be subject to limitation. The amounts presented do not include NOLs or research and development tax credit carryforwards that will expire unused due to ownership changes.

The Company applies the accounting guidance in ASC 740 related to accounting for uncertainty in income taxes. The Company's reserves related to taxes are based on a determination of whether, and how much of, a tax benefit taken by the Company in its tax filings or positions is more likely than not to be realized following resolution of any potential contingencies present related to the tax benefit. As of December 31, 2015 and 2016, the Company had no unrecognized tax benefits.

The Company has not conducted a study of its research and development credit carryforwards. This study may result in an adjustment to research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits and, if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the balance sheets or statements of operations if an adjustment were required.

Interest and penalties related to uncertain tax positions would be classified as income tax expense in the accompanying statements of operations. As of December 31, 2016 and 2015, the Company had no accrued interest or penalties related to uncertain tax positions.

The Company files income tax returns in the United States federal tax jurisdiction and one state jurisdiction. The Company did not have any foreign operations during the years ended December 31, 2015 and 2016. The statute of limitations for assessment by the Internal Revenue Service and state tax authorities is closed for tax years prior to 2013, although carryforward attributes that were generated prior to tax year 2013 may still be adjusted upon examination to the extent utilized in a future period. There are currently no federal or state audits in progress.

11. Employee benefit plan

The Company has a defined contribution plan established under Section 401(k) of the Internal Revenue Code (401(k) Plan), which covers substantially all employees. Employees who have attained the age of 21 are eligible to participate in the 401(k) Plan with no service requirement. Employees may contribute up to 75% of eligible pay on a pre–tax basis up to the federal annual limits. The Company matches the employees contributions at 50% on the first 6% up to $3. In 2017, the Company increased the maximum annual matching contribution to $6. For the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, the Company recorded expense of $100, $136, $40 and $77, respectively, related to its contribution to its 401(k) Plan.

12. Commitments

Operating leases

The Company leases office space in Cambridge, MA under an operating lease, which is effective through March 2019. The lease provided the Company with a tenant improvement allowance of up to $356. The Company fully utilized the allowance and recorded the assets acquired with the allowance as leasehold improvements. The Company recorded the tenant improvement allowance as a deferred lease incentive and is amortizing the deferred lease incentive through a reduction of rent expense ratably over the lease term.

The Company is recording rent expense on a straight-line basis over the term of the lease and has recorded deferred rent in the consolidated balance sheets, accordingly.

The Company has a $321 standby letter of credit for the security deposit on the lease. The letter of credit is collateralized by a restricted cash account, which is included in other assets.

In addition, the Company leases certain equipment under operating leases that expire through September 2018. As of December 31, 2016 future minimum lease payments under operating leases were as follows:

2017	$1,940
2018	1,987
2019	486
	$4,413

Rent expense was approximately $947, $1,572, $274 and $447 for the years ended December 31, 2015 and 2016 and the three months ended March 31, 2016 and 2017, respectively.

License agreements

Adimab

In 2014, the Company paid an option exercise fee of $1,500 to Adimab for the rights to the antibody used in XMT-1522. The Company was initially obligated to pay Adimab up to $26,500 in development and regulatory milestones for each product containing this antibody and a low-single digit percentage royalty on net sales of each product if this product is successfully developed and commercialized. During the three months ended March 31, 2017, the Company made a milestone payment of $1,500 to Adimab with respect to XMT-1522.

Recepta

In July 2015, the Company entered into a license agreement with Recepta Biopharma S.A., or Recepta, a Brazilian biopharmaceutical company, licensing Recepta's NaPi2b antibody for use in XMT-1536 and granting Recepta the exclusive right to commercialize XMT-1536 in Brazil.

Under this agreement, the Company paid Recepta an upfront payment of $1,000 and is obligated to pay Recepta up to $65,500 in development, regulatory and commercial milestones and tiered royalties in the low-single digit percentages on net sales of products outside of Brazil if products are successfully developed and commercialized. The Company is entitled to receive tiered royalties in the low- to mid-single digit percentages on net sales of products in Brazil if products are successfully developed and commercialized.

13. Related party transactions

Included in Series C-1 financing was investment of $10,000 by Takeda, one of the Company's strategic partners.

14. Subsequent events

(a) For the purposes of the audited financial statements as of December 31, 2015, December 31, 2016 and the years then ended, the Company has evaluated subsequent events through March 17, 2017, the date the audited financial statements were issued and through June 15, 2017, the date the revised financial statements were issued. For the purposes of the unaudited financial statements as of March 31, 2017 and the period then ended, the Company has evaluated subsequent events through May 12, 2017, the date the unaudited interim financial statements were issued and through June 15, 2017, the date the revised financial statements were issued. There were no items requiring adjustment or disclosure in the consolidated financial statements.

(b) In connection with preparing for its initial public offering, on June 13, 2017 the Company's board of directors and stockholders approved amendments to the Company's certificate of incorporation. Pursuant to these amendments:

- a 1-for-4.5 reverse stock split of the Company's common stock was effected and the conversion price for each series of preferred stock was adjusted, effective as of June 15, 2017; and
- the authorized number of shares of common stock was increased to 175,000,000, to be effective upon the closing of the Company's IPO.

All share and per share amounts in the consolidated financial statements and notes thereto have been retroactively adjusted for all periods presented to give effect to the reverse stock split, including reclassifying an amount equal to the reduction in par value of common stock to additional paid-in capital.

The Company's board of directors adopted and the Company's stockholders approved the 2017 Stock Incentive Plan ("2017 Plan"). The 2017 Plan provides for the grant of incentive stock options, non-statutory stock options, restricted stock awards, restricted stock units, stock appreciation rights and other stock-based awards. The Company's employees, officers, directors and consultants are eligible to receive awards under the 2017 Plan.

The Company's board of directors also adopted and the Company's stockholders approved the 2017 employee stock purchase plan, which will become effective upon the closing of the Company's IPO.

5,000,000 shares

Common stock

Prospectus

J.P. Morgan | Cowen | Leerink Partners

Wedbush PacGrow

Through and including , 2017 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.