Filed Pursuant to Rule 424(b)(4)
Registration No. 333-225846

6,700,000 shares

Replimune Group, Inc.

Common stock

$15.00 per share

This is the initial public offering of our common stock. We are selling 6,700,000 shares of our common stock. The initial public offering price is $15.00 per share of common stock.

Prior to this offering, there has been no public market for our common stock. Our common stock has been approved for listing on the Nasdaq Global Select Market, or Nasdaq, under the symbol "REPL."

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, and therefore have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings. See "Prospectus summary—Implications of being an emerging growth company."

Investing in our common stock involves risks. See "Risk factors" beginning on page 14.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per share	Total
Initial public offering price	$ 15.00	$ 100,500,000
Underwriting discount[(1)]	$ 1.05	$ 7,035,000
Proceeds to Replimune Group, Inc. (before expenses)	$ 13.95	$ 93,465,000

(1) See "Underwriting" for additional information regarding total underwriting compensation.

The underwriters expect to deliver the shares to purchasers on or about July 24, 2018.

We have granted the underwriters an option for a period of 30 days to purchase up to 1,005,000 additional shares of our common stock at the initial public offering price less the underwriting discount.

Several of our existing stockholders (or their affiliates), including stockholders affiliated with certain of our independent directors, and one of our independent directors, have agreed to purchase an aggregate of approximately 3.3 million shares of our common stock in this offering at the initial public offering price. The underwriters will receive the same underwriting discount on any shares purchased by these investors as they will on any other shares sold to the public in this offering.

J.P. Morgan **Leerink Partners** **BMO Capital Markets**

Prospectus dated July 19, 2018

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Unless the context otherwise requires, references in this prospectus to (i) "Replimune," the "Company," "we," "us" and "our" refer to Replimune Group, Inc. and its consolidated subsidiaries and (ii) a year are references to the applicable calendar year and not our fiscal year.

You should rely only on the information contained in this prospectus or contained in any free writing prospectus prepared by or on behalf of us and filed with the Securities and Exchange Commission, or the SEC. Neither we nor the underwriters have authorized anyone to provide you with additional information or information different from that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us and filed with the SEC. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters are offering to sell, and seeking offers to buy, our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus or any free writing prospectus is accurate only as of its date, regardless of its time of delivery or of any sale of our common stock. Our business, financial conditions, results of operations and prospects may have changed since that date.

Through and including August 13, 2018 (the 25th day after the date of this prospectus), all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

For investors outside the United States: Neither we nor any of the underwriters have 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 in the United States. Persons who come into possession of this prospectus in jurisdictions outside of the United States are required to inform themselves about and to observe any restrictions relating to this offering and the distribution of this prospectus outside of the United States.

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 read the entire prospectus carefully, including the sections entitled "Risk factors" and "Management's discussion and analysis of financial condition and results of operations," and our consolidated financial statements and the related notes.

Business overview

We are a clinical-stage biotechnology company committed to applying our leading expertise in the field of oncolytic immunotherapy to transform the lives of cancer patients. We use our proprietary Immulytic platform to design and develop product candidates that are intended to maximally activate the immune system against solid tumors. The foundation of our platform consists of a proprietary, engineered strain of herpes simplex virus 1, or HSV-1, that has been "armed" with a fusogenic therapeutic protein intended to substantially increase anti-tumor activity. Our platform enables us to design multiple product candidates that incorporate various further genes whose expression is intended to augment the inherent properties of HSV-1 to both directly destroy tumor cells and induce an anti-tumor immune response.

We are currently conducting a Phase 1/2 clinical trial with our lead product candidate, RP1, in approximately 150 patients with a range of solid tumors. We have entered into a collaboration with Bristol-Myers Squibb Company, or BMS, under which it has granted us a non-exclusive, royalty-free license to, and is supplying at no cost, its anti-PD-1 therapy, nivolumab, for use in combination with RP1 in this clinical trial. BMS has no further development-related obligations under this collaboration. The first part of this clinical trial is underway in the United Kingdom and we intend to conduct the second part of the clinical trial, which will enroll patients with four solid tumor types, in both the United Kingdom and, pending the opening of an Investigational New Drug Application, or IND, in the United States. We have also entered into a collaboration agreement with Regeneron Pharmaceuticals, Inc., or Regeneron, under which we intend to conduct clinical development of our product candidates in combination with cemiplimab, an anti-PD-1 therapy being developed by Regeneron. For each clinical trial conducted under this collaboration, Regeneron will fund one-half of the clinical trial costs, supply cemiplimab at no cost, and grant us a non-exclusive, royalty-free license to cemiplimab for use in the clinical trial. The first planned clinical trial to be conducted under this collaboration is a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with cutaneous squamous cell carcinoma, or CSCC, which we intend to initiate in the first half of 2019. If compelling clinical data are generated demonstrating the benefits of the combined treatment, we believe the data from this trial could support a filing with regulatory authorities for marketing approval. We also intend to initiate a clinical trial with our second product candidate, RP2, in additional tumor types in the first half of 2019.

Oncolytic immunotherapy is an emerging class of cancer treatment that exploits the ability of certain viruses to selectively replicate in and directly kill tumors, as well as induce a potent, patient-specific, anti-tumor immune response. While clinically active alone, oncolytic immunotherapy may have synergy with certain other treatments and, in particular, with immune checkpoint blockade therapies. Immune checkpoint blockade therapies have recently become established for the treatment of cancer, but only for patients with an ongoing anti-tumor immune response, that is, whose tumors are immunologically "hot." Our product candidates are designed to induce a robust immune response against a patient's cancer, including to the neo-antigens that are uniquely present in tumors, with the goal of improving responses in

immunologically "hot" tumors, turning immunologically "cold" tumors "hot," and enabling patients to respond to immune checkpoint blockade therapies to which they otherwise may not respond.

Our approach combines multiple mechanisms of action into single product candidates in a practical, "off-the-shelf" format. We believe that the bundling of multiple approaches for the treatment of cancer into single therapies will simplify the development path of our product candidates, while also improving patient outcomes at a lower cost to the healthcare system than the use of multiple different drugs.

Our management team has worked together for more than ten years and successfully developed the first oncolytic immunotherapy, Imlygic, also known as talimogene laherparepvec, or T-Vec, which was approved by the U.S. Food and Drug Administration, or FDA, for the treatment of advanced melanoma in 2015.

Our product candidate pipeline

We are developing a pipeline of oncolytic immunotherapy product candidates that we believe have the potential to provide meaningful and long-lasting clinical benefits to cancer patients. The following table summarizes our current pipeline and expectations for development timelines:

Product candidate	Indication	Stage of development
RP1	Mixed advanced solid tumors	Phase 1 clinical trial of RP1 alone and in combination with nivolumab ongoing in the UK in approximately 30 patients (part of an approximately 150 patient Phase 1/2 clinical trial, with Phase 2 to initiate in H1 2019)
	Metastatic melanoma	To initiate four Phase 2 cohorts, approximately 30 patients per cohort, of the ongoing Phase 1/2 clinical trial testing RP1 in combination with nivolumab in H1 2019
	Metastatic bladder cancer	
	Microsatellite instability high cancer	
	Non-melanoma skin cancer	
	Cutaneous squamous cell carcinoma	To enter a Phase 2 controlled clinical trial testing RP1 in combination with cemiplimab vs cemiplimab alone in H1 2019, assuming the opening of an IND or foreign equivalent
RP2	Mixed advanced solid tumors	In preclinical development; to enter a Phase 1 clinical trial in H1 2019, assuming the opening of an IND or foreign equivalent
	Triple negative breast cancer[1]	To enter a Phase 2 clinical trial in H2 2019, assuming the opening of an IND or foreign equivalent
RP3	Anti-PD-1/L1 non-responsive tumors	In preclinical development; to enter a Phase 1 clinical trial in H1 2020, assuming the opening of an IND or foreign equivalent

(1) Two additional tumor types to be selected for Phase 2 clinical development, with clinical trials expected to commence in H2 2019, assuming in each case the opening of an IND or foreign equivalent.

We are conducting an ongoing Phase 1/2 clinical trial of RP1 in approximately 150 patients. RP1 is the first product candidate from our Immulytic platform and is armed with two therapeutic genes that are intended to increase the natural ability of HSV-1 to kill tumor cells and induce an anti-tumor immune response. In the first part of the clinical trial, which we are currently conducting in the United Kingdom, we are evaluating safety in approximately 30 patients with a range of solid tumor types both alone and in

combination with nivolumab. No serious adverse events have been reported to date that have been determined to be related to RP1. In the second part of the trial, which we will conduct in both the United Kingdom and, pending the opening of an IND, in the United States, we will test RP1 in combination with nivolumab in four different tumor types in cohorts of approximately 30 patients each. These tumor types are metastatic melanoma, metastatic bladder cancer, microsatellite instability high cancer, and non-melanoma skin cancer. In this part of the study, we intend to continue to evaluate the safety and tolerability of RP1 in combination with nivolumab, assess efficacy endpoints under the clinical trial protocol, and then analyze each cohort's data to determine the indications that merit progressing into further clinical development. In addition, we are preparing to initiate a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with CSCC in the first half of 2019. If compelling clinical data are generated demonstrating the benefits of the combined treatment, we believe the data from this trial could support a filing with regulatory authorities for marketing approval.

We are also developing additional product candidates, including RP2 and RP3, built on our Immulytic platform that are additionally engineered to further enhance anti-tumor immune responses and to address additional tumor types. RP2 has been engineered to express an antibody-like molecule that blocks the activity of CTLA-4, a protein that inhibits immune responses to tumors. We are engineering RP3 with the intent not only to block the activity of CTLA-4, but also to further stimulate an anti-tumor immune response through activation of the immune co-stimulatory pathways. We intend to file INDs and foreign equivalents for both RP2 and RP3 and, subject to regulatory approval, expect that RP2 will enter clinical development in the first half of 2019, and that RP3 will enter clinical development in the first half of 2020. As demonstrated by our planned development timelines, we believe that a particular advantage of our Immulytic platform is that it allows us to develop new product candidates that contain additional genes encoding therapeutic proteins rapidly from conception through to the initiation of clinical trials.

We administer our product candidates by direct injection into solid tumors. We believe that direct injection maximizes virus-mediated tumor cell death, provides the most efficient delivery of virus-encoded immune activating proteins into the tumor, and limits the systemic toxicities that could be associated with intravenous administration. Activation of systemic immunity through local administration can lead to systemic clinical benefit through the induction of responses in tumors which have not themselves been injected, which is known as an "abscopal" effect.

While products and product candidates based on the oncolytic immunotherapy approach have shown single-agent activity, we believe our product candidates will demonstrate particular synergy in combination with immune checkpoint blockade therapies, including those that target the programmed cell death protein 1, or PD-1, a tumor cell surface receptor that plays an important role in inhibiting, or shutting down, immune responses, or the receptor or ligand for PD-1, called PD-L1. We are designing our product candidates with additional mechanisms of action as compared to T-Vec, as well as other oncolytic immunotherapies in development, with the goal of maximizing both direct tumor killing and the activation of the patients' immune system against their particular cancer. We believe these additional mechanisms of action of our product candidates will increase tumor susceptibility to immune checkpoint blockade therapies and, in particular, work synergistically with antibodies targeting PD-1 or PD-L1 to enhance response rates across a range of tumor types.

Our founders and core management team, including Robert Coffin, our President and Chief Executive Officer, Philip Astley-Sparke, our Executive Chairman, and Colin Love, our Chief Operating Officer, were the founder and senior management team of BioVex Group, Inc., or BioVex, where they invented and developed T-Vec. BioVex was acquired by Amgen Inc., or Amgen, in 2011. Our Chief Medical Officer, Howard

Kaufman, was the principal investigator for the pivotal clinical trial upon which T-Vec was approved and previously served as President of the Society for the Immunotherapy of Cancer.

We are backed by a group of leading institutional life science investors, including affiliates of Atlas Ventures, Bain Capital Life Sciences, BVF Partners, Cormorant Capital, Forbion Capital Partners, Foresite Capital, Omega Funds and Redmile Group.

Our strategy

Our goal is to create the leading oncolytic immunotherapy company that discovers, develops and commercializes next-generation products with multiple mechanisms of action for the treatment of a broad range of solid tumor types. Key elements of our strategy include the following:

Advance the development of, and seek regulatory approval for, our lead product candidate, RP1. In the first half of 2019, we are planning to commence a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with CSCC. In addition, we are currently conducting an approximately 150 patient Phase 1/2 clinical trial of RP1 targeting four different tumor types in the United Kingdom and, pending the opening of an IND, in the United States. We intend to analyze data for each tumor type to determine the indications that merit further clinical development.

Initiate the clinical development of and obtain regulatory approval for RP2, our next product candidate. We plan to initiate a Phase 1/2 clinical trial in the first half of 2019 of RP2 in combination with anti-PD-1 therapy in triple negative breast cancer and two further indications.

Leverage our Immulytic platform to build a portfolio of product candidates that target a range of immune mechanisms and progress these product candidates into the clinic. We plan to utilize our Immulytic platform to develop additional product candidates, including RP3, that express further combinations of proteins aimed at activating multiple immune mechanisms for the treatment of a broad range of solid tumor types. Our current goal in the coming years is to introduce one product candidate into the clinic each year.

Apply our extensive expertise to establish, equip, and operate our own in-house manufacturing facility. We intend to establish, equip, and operate our own manufacturing facility in Framingham, Massachusetts for multi-product current Good Manufacturing Practice, or cGMP, manufacturing. We expect our facility to be ready to produce clinical-grade material during the first half of 2020 and ultimately to be able to support commercial product launch.

Retain significant economic and commercial rights to our product candidates in key geographic areas. We intend to retain rights in the United States for our product candidates and to develop an oncology-focused commercial organization. When economically attractive, we intend to evaluate and enter into development and marketing agreements with pharmaceutical and biotechnology partners for geographic areas in which we are unlikely to pursue development and commercialization on our own.

Risks affecting our business

You should consider carefully the risks described under the "Risk factors" section beginning on page 14 and elsewhere in this prospectus. The risks that could materially and adversely affect our business, financial condition, operating results and prospects include the following:

- Our product candidates are in the early stages of development, are not approved for commercial sale and might never receive regulatory approval or become commercially viable. We have never generated any revenue from product sales and may never be profitable.
- We currently have only one product candidate, RP1, in clinical development. A failure of this product candidate in clinical development would adversely affect our business and may require us to discontinue development of other product candidates based on the same therapeutic approach.
- We will not be able to commercialize our product candidates if our preclinical studies do not produce successful results and/or our clinical trials do not demonstrate the safety and efficacy of our product candidates.
- We anticipate that our product candidates will be used in combination with third-party drugs, some of which are still in development, and we have limited or no control over the supply, regulatory status, or regulatory approval of these drugs.
- Even if our development efforts are successful, we may not obtain regulatory approval for any of our product candidates in the United States or other jurisdictions, which could prevent us from commercializing our product candidates.
- Following submission of our IND for RP1 in February 2018, the FDA informed us that our Phase 1/2 clinical trial of RP1 may not commence at sites in the United States until we submit the results of an additional preclinical toxicology and biodistribution study that the FDA requested at a pre-IND meeting held in October 2017, and the FDA clears us to proceed with the clinical trial. Until such time, the clinical trial is on clinical hold. If we are not able to obtain, or if we experience delays in obtaining, required regulatory approvals from the FDA, we may not be able to commercialize our product candidates in the United States as expected, and our ability to generate revenue may be materially impaired.
- Even if we obtain regulatory approval for our product candidates, any such approval may be subject to limitations, including with respect to the approved indications or patient populations, which could impair our ability to successfully commercialize our product candidates.
- If we are unable to successfully commercialize any product candidate for which we receive regulatory approval, or experience significant delays in doing so, our business will be materially harmed.
- Negative developments in the field of immuno-oncology could damage public perception of RP1 or any of our other product candidates and negatively affect our business.
- We face significant competition from other biopharmaceutical and biotechnology companies, academic institutions, government agencies, and other research organizations, which may result in others discovering, developing or commercializing products more quickly or marketing them more successfully than us. If their product candidates are shown to be safer or more effective than ours, our commercial opportunity could be reduced or eliminated.

- We are a clinical-stage biopharmaceutical company with a very limited operating history. We have incurred net losses since our inception and anticipate that we will continue to incur substantial and increasing net losses in 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 on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development or commercialization efforts.
- If we are unable to obtain, maintain and protect our intellectual property rights for our technology and product candidates, or if our intellectual property rights are inadequate, our competitive position could be harmed.
- We have agreements with BMS and Regeneron, and in the future may have agreements with other companies, to obtain the supply of anti-PD-1 therapies for the development of RP1 and our other product candidates. If our relationships with BMS, Regeneron or any future collaborator or supplier are not successful, we may be delayed in completing the development of RP1 and our other product candidates.
- We rely, and expect to continue to rely, on third parties to conduct, supervise, and monitor our preclinical studies and clinical trials, and if those third parties do not perform satisfactorily, including failing to meet deadlines for the completion of such trials or failing to comply with regulatory requirements, we may be unable to obtain regulatory approval for our product candidates or any product candidates that we may develop in the future.
- We face potential product liability exposure, and if successful claims are brought against us, we may incur substantial liability and have to limit the commercialization of any approved products and/or our product candidates.
- We are highly dependent on our key personnel, including our founders, Robert Coffin, Ph.D., our President and Chief Executive Officer, Philip Astley-Sparke, our Executive Chairman, Howard Kaufman, M.D., our Chief Medical Officer, and Colin Love, Ph.D., our Chief Operating Officer. If we are not successful in attracting, motivating and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.
- We have identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect our business.

Company and other information

The parent company of our group is Replimune Group, Inc., a Delaware corporation that was formed in July 2017. Prior to the corporate reorganization described below, the parent company of our group was Replimune Limited, a private company limited by shares incorporated in England and Wales (registered number 09496393), which was organized in March 2015.

In July 2017, all of the outstanding equity securities of Replimune Limited were exchanged for equity securities of Replimune Group, Inc., a newly formed Delaware corporation. Following the reorganization, Replimune Limited is a wholly owned subsidiary of Replimune Group, Inc. See "Management's discussion and analysis of financial condition and results of operations—Overview" for more information.

Our principal executive office is located at 18 Commerce Way, Woburn, MA 01801 and our telephone number is (781) 995-2443. Our website address is https://www.replimune.com. We do not incorporate the information on or accessible through our website into this prospectus and you should not consider any information on, or that can be accessed through, our website as part of this prospectus. Our fiscal year end is March 31.

We own various United Kingdom registered trademarks and United States federal trademark applications and unregistered trademarks, including our company name and the "Immulytic" platform name. All other trademarks, service marks and trade names used in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the symbols ® and ™, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

Implications of being an emerging growth company

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.07 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period. We refer to the Jumpstart Our Business Startups Act of 2012 in this prospectus as the "JOBS Act," and references in this prospectus to "emerging growth company" have the meaning ascribed to it in the JOBS Act.

An emerging growth company may take advantage of specified reduced reporting requirements and other burdens that are otherwise applicable generally to public companies. These provisions include, but are not limited to:

- being permitted to present only two years of audited financial statements and only two years of related Management's discussion and analysis of financial condition and results of operations in this prospectus;
- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or Sarbanes-Oxley Act;
- an exemption from compliance with any new requirements adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotations;
- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements; and
- exemptions from the requirement to hold a nonbinding advisory vote on executive compensation and to obtain stockholder approval of any golden parachute payments not previously approved.

We may use these provisions until such time as we cease to be an emerging growth company.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our investors may be different from the information you might receive from other public reporting companies that are not emerging growth companies in which you hold equity interests.

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

The offering

Common stock we are offering	6,700,000 shares.
Underwriters' option to purchase additional shares	We have granted the underwriters an option for a period of 30 days to purchase up to 1,005,000 additional shares of our common stock.
Common stock outstanding after giving effect to this offering	30,838,587 shares (31,843,587 shares if the underwriters exercise their option to purchase additional shares in full).
Use of proceeds	The net proceeds from the sale of 6,700,000 shares of common stock in this offering will be approximately $90.8 million, or approximately $104.8 million if the underwriters exercise their option to purchase additional shares in full, at the initial public offering price of $15.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We currently expect to use the net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, as follows: • approximately $20.0 million to fund the development of RP1 through the completion of the ongoing Phase 1/2 clinical trial in four solid tumor types; • approximately $15.0 million to fund our share of the costs to fully recruit our planned Phase 2 clinical trial with RP1 in CSCC; • approximately $20.0 million to fund the completion of the preclinical development and the initial clinical trials of RP2 in approximately 100 patients; • approximately $10.0 million to fund the completion of preclinical development and a Phase 1 clinical trial of RP3; • approximately $20.0 million to fund capital expenditures associated with establishing and equipping our planned manufacturing facility in Framingham, Massachusetts; and • the remainder for general corporate purposes, including working capital requirements and operating expenses.
Dividend policy	We do not intend to pay dividends for the foreseeable future. Any future determination to pay dividends on our common stock will be at the discretion of our board of directors and will depend upon many factors, including our financial position, results of operations, liquidity and legal requirements. See "Dividend policy."

Risk factors	See "Risk factors" beginning on page 14 and the other information included in this prospectus for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Nasdaq Symbol	"REPL"

Several of our existing stockholders (or their affiliates), including stockholders affiliated with certain of our independent directors, and one of our independent directors, have agreed to purchase an aggregate of approximately 3.3 million in shares of our common stock in this offering at the initial public offering price. The underwriters will receive the same underwriting discount on any shares purchased by these investors as they will on any other shares sold to the public in this offering.

The number of shares of our common stock to be outstanding after this offering is based on 24,138,587 shares of our common stock outstanding as of March 31, 2018, after giving effect to the conversion of all outstanding shares of our preferred stock as of March 31, 2018 into an aggregate of 19,157,360 shares of our common stock upon the completion of this offering, and excludes:

- 2,520,247 shares of our common stock issuable upon the exercise of stock options outstanding as of March 31, 2018 at a weighted average exercise price of $2.72 per share;
- 497,344 shares of our common stock issuable upon the exercise of warrants outstanding as of March 31, 2018, at an exercise price of $1.01 per share;
- 3,486,118 shares of our common stock reserved for future issuance under our 2018 Omnibus Incentive Compensation Plan, or our 2018 Plan, which became effective upon the effectiveness of the registration statement of which this prospectus is a part;
- 131,850 shares of our common stock reserved for future issuance as of March 31, 2018 under our 2017 Equity Compensation Plan, as amended, or our 2017 Plan, which became available for issuance under our 2018 Plan upon the effectiveness of our 2018 Plan;
- 348,612 shares of our common stock reserved for future issuance under our Employee Stock Purchase Plan, or our ESPP, which became effective upon the effectiveness of the registration statement of which this prospectus is a part; and
- 26,258 shares of our common A stock outstanding as of March 31, 2018, all of which will be repurchased by us and canceled immediately prior to the completion of this offering.

Unless otherwise indicated, all information in this prospectus reflects or assumes the following:

- the conversion of all outstanding shares of our preferred stock into 19,157,360 shares of our common stock upon the completion of this offering;
- the repurchase and cancellation of all outstanding shares of our common A stock immediately prior to the completion of this offering;
- a 1-for-9.94688 forward stock split of our common stock effected on July 9, 2018, and corresponding adjustments to (i) the rate at which shares of our preferred stock convert into shares of our common stock, (ii) the exercise price of all outstanding stock options and warrants and (iii) the number of shares of our common stock subject to each outstanding option and warrant;

- no exercise by the underwriters of their option to purchase additional shares of our common stock;
- the filing of our amended and restated certificate of incorporation and adoption of our amended and restated bylaws immediately prior to the completion of this offering; and
- the conversion of all outstanding warrants to purchase shares of series seed convertible preferred stock, or series seed preferred stock, into warrants to purchase 497,344 shares of our common stock upon the completion of this offering.

Summary consolidated financial data

You should read the following summary consolidated financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the "Selected consolidated financial data" and "Management's discussion and analysis of financial condition and results of operations" sections of this prospectus. We have derived the consolidated statement of operations data for the years ended March 31, 2017 and 2018 and the consolidated balance sheet data as of March 31, 2017 and 2018 from our audited consolidated financial statements appearing at the end of this prospectus. Our historical results are not necessarily indicative of results that should be expected in any future period.

	Year ended March 31,	
	2017	2018
	(Amounts in thousands, except share and per share data)	
Consolidated statement of operations data		
Operating expenses:		
Research and development	$ 6,936	$ 13,516
General and administrative	2,711	5,713
Total operating expenses	9,647	19,229
Loss from operations	(9,647)	(19,229)
Other income (expense):		
Research and development incentives	1,442	2,267
Interest income	25	288
Change in fair value of warrant liability	(150)	(972)
Other income (expense), net	626	(2,056)
Total other income (expense), net	1,943	(473)
Net loss	(7,704)	(19,702)
Net loss attributable to common stockholders	$ (7,704)	$ (19,702)
Net loss per share attributable to common stockholders, basic and diluted[(1)]	$ (1.55)	$ (3.96)
Weighted average common shares outstanding, basic and diluted[(1)]	4,973,439	4,978,539
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)[(1)]		$ (0.87)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)[(1)]		21,506,697

(1) See Note 12 to our consolidated financial statements appearing at the end of this prospectus for further details on the calculation of basic and diluted net loss per share attributable to common stockholders and the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders.

	As of March 31, 2018		
	Actual	Pro forma[2]	Pro forma as adjusted[2][3]
	(Amounts in thousands)		
Consolidated balance sheet data			
Cash and cash equivalents and short-term investments	$ 61,551	$ 61,551	$ 152,316
Working capital[1]	59,539	59,539	150,304
Total assets	65,151	65,151	155,916
Warrant liability	1,642	—	—
Total liabilities	6,858	5,216	5,216
Convertible preferred stock	86,361	—	—
Total stockholders' equity (deficit)	(28,068)	59,935	150,700

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

(2) The pro forma consolidated balance sheet data give effect to (i) the conversion of all outstanding shares of our preferred stock into an aggregate of 19,157,360 shares of common stock upon the completion of this offering, (ii) all outstanding warrants to purchase shares of series seed preferred stock becoming warrants to purchase shares of common stock upon the completion of this offering and (iii) all outstanding shares of our common A stock being repurchased by us and canceled immediately prior to the completion of this offering.

(3) The pro forma as adjusted balance sheet data gives further effect to our issuance and sale of 6,700,000 shares of our common stock in this offering at the initial public offering price of $15.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

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 in this prospectus, including our consolidated financial statements and related notes appearing at the end of this prospectus, before deciding whether to purchase shares of our common stock. If any of the following risks are realized, our business, financial condition, operating results and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, and you could lose part or all 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 product development

Our product candidates are in the early stages of development, are not approved for commercial sale and might never receive regulatory approval or become commercially viable. We have never generated any revenue from product sales and may never be profitable.

All of our product candidates are in research or early development. We have not generated any revenues from the sale of products and do not expect to do so for at least the next several years. Our lead product candidate, RP1, and any other product candidates will require extensive preclinical and/or clinical testing and regulatory approval prior to commercial use. Our research and development efforts may not be successful. Even if our clinical development efforts result in positive data, our product candidates may not receive regulatory approval or be successfully introduced and marketed at prices that would permit us to operate profitably.

We currently have only one product candidate, RP1, in clinical development. A failure of this product candidate in clinical development would adversely affect our business and may require us to discontinue development of other product candidates based on the same therapeutic approach.

RP1 is our only clinical development-stage product candidate. Although we have other product candidates, RP2 and RP3, in preclinical development and we intend to develop additional product candidates in the coming years, it will take additional investment and time for such product candidates to reach the same stage of development as RP1, and there can be no assurance that they will ever do so. Since all of the product candidates in our current pipeline are based on our Immulytic platform, if RP1 fails in development as a result of any underlying problem with our Immulytic platform, then we may be required to discontinue development of all product candidates that are based on our therapeutic approach. If we were required to discontinue development of RP1 or our other product candidates, or if any of them were to fail to receive regulatory approval or achieve sufficient market acceptance, we could be prevented from or significantly delayed in achieving profitability. We can provide no assurance that we would be successful at developing other product candidates based on an alternative therapeutic approach.

We will not be able to commercialize our product candidates if our preclinical studies do not produce successful results and/or our clinical trials do not demonstrate the safety and efficacy of our product candidates.

Our lead product candidate, RP1, is in the early stages of a Phase 1/2 clinical trial in the United Kingdom and, pending the opening of an IND, in the United States, while our other product candidates, RP2 and RP3, are in preclinical development. We expect to file INDs and foreign equivalents for RP2 and RP3 and, subject to regulatory clearance, expect RP2 to begin a Phase 1/2 clinical trial in the first half of 2019 and

expect RP3 to enter clinical development in the first half of 2020. Our product candidates will require preclinical and clinical trials before we can submit a marketing application to the applicable regulatory authorities. Our product candidates are susceptible to the risks of failure inherent at any stage of product development, including the occurrence of unexpected or unacceptable adverse events or the failure to demonstrate efficacy in clinical trials. Clinical development is expensive and can take many years to complete, and its outcome is inherently uncertain.

The results of preclinical studies, preliminary study results, and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. While we are currently conducting an early stage Phase 1/2 clinical trial with RP1, we do not yet have clinical results for any of our product candidates. Our product candidates may not perform as we expect, may ultimately have a different or no impact on tumors, may have a different mechanism of action than we expect in humans, and may not ultimately prove to be safe and effective.

Preliminary and final results from preclinical studies and early stage trials, and trials in compounds that we believe are similar to ours, may not be representative of results that are found in larger, controlled, blinded, and longer-term studies. Product candidates may fail at any stage of preclinical or clinical development. Product candidates may fail to show the desired safety and efficacy traits even if they have progressed through preclinical studies or initial clinical trials. Preclinical studies and clinical trials may also reveal unfavorable product candidate characteristics, including safety concerns. A number of companies in the biopharmaceutical industry have suffered significant setbacks in clinical trials, notwithstanding promising results in earlier preclinical studies or clinical trials or promising mechanisms of action. In some instances, there can be significant variability in safety or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, changes in and adherence to the clinical trial protocols and the rate of dropout among clinical trial participants. Moreover, should there be an issue with the design of a clinical trial, our results may be impacted. We may not discover such a flaw until the clinical trial is at an advanced stage.

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

- regulators or institutional review boards, or IRBs, may not authorize us or our investigators to commence a clinical trial, conduct a clinical trial at a prospective trial site, or amend trial protocols, or may require that we modify or amend our clinical trial protocols;

- we may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites and/or clinical research organizations, or CROs;

- clinical trials of our product candidates may produce negative or inconclusive results, or our studies may fail to reach the necessary level of statistical significance, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;

- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials or be lost to follow-up at a higher rate than we anticipate, or may elect to participate in alternative clinical trials sponsored by our competitors with product candidates that treat the same indications as our product candidates;

- our third-party contractors may fail to comply with regulatory requirements or the clinical trial protocol, or meet their contractual obligations to us in a timely manner, or at all, or we may be required to engage in additional clinical trial site monitoring;
- we, regulators, or IRBs may require that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks, undesirable side effects, or other unexpected characteristics of the product candidate, or due to findings of undesirable effects caused by a chemically or mechanistically similar therapeutic or therapeutic candidate;
- changes could be adopted in marketing approval policies during the development period, rendering our data insufficient to obtain marketing approval;
- statutes or regulations could be amended or new ones could be adopted;
- changes could be adopted in the regulatory review process for submitted product applications;
- the cost of clinical trials of our product candidates may be greater than we anticipate or we may have insufficient funds for a clinical trial or to pay the substantial user fees required by the FDA upon the filing of a Biologics License Application, or BLA, or equivalent authorizations from comparable foreign regulatory authorities;
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate;
- we may decide, or regulators may require us, to conduct or gather, as applicable, additional clinical trials, analyses, reports, data, or preclinical trials, or we may abandon product development programs;
- we may fail to reach an agreement with regulators or IRBs regarding the scope, design, or implementation of our clinical trials, and the FDA or comparable foreign regulatory authorities may require changes to our study designs that make further study impractical or not financially prudent;
- regulators may ultimately disagree with the design or our conduct of our preclinical studies or clinical trials, finding that they do not support product candidate approval;
- we may have delays in adding new investigators or clinical trial sites, or we may experience a withdrawal of clinical trial sites;
- patients that enroll in our studies may misrepresent their eligibility or may otherwise not comply with the clinical trial protocol, resulting in the need to drop the patients from the study or clinical trial, increase the needed enrollment size for the clinical trial or extend its duration;
- there may be regulatory questions or disagreements regarding interpretations of data and results, or new information may emerge regarding our product candidates;
- the FDA or comparable foreign regulatory authorities may disagree with our study design, including endpoints, or our interpretation of data from preclinical studies and clinical trials or find that a product candidate's benefits do not outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may not accept data from studies with clinical trial sites in foreign countries;
- the FDA or comparable foreign regulatory authorities may disagree with our intended indications;

- the FDA or comparable foreign regulatory authorities may fail to approve or subsequently find fault with the manufacturing processes or our manufacturing facilities for clinical and future commercial supplies;

- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or comparable foreign regulatory authorities to support the submission of a BLA or other comparable submission in foreign jurisdictions or to obtain regulatory approval in the United States or elsewhere;

- the FDA or comparable foreign regulatory authorities may take longer than we anticipate to make a decision on our product candidates; and

- we may not be able to demonstrate that a product candidate provides an advantage over current standards of care or current or future competitive therapies in development.

Our development costs will also increase if we experience delays in testing or approvals, and we may not have sufficient funding to complete the testing and approval process for any of our product candidates. We may be required to obtain additional funds to complete clinical trials and prepare for possible commercialization of our product candidates. We do not know whether any preclinical tests or clinical trials beyond what we currently have planned will be required, will begin as planned, will need to be restructured, or will be completed on schedule, or at all. Significant delays relating to any preclinical or clinical trials also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our product candidates and may harm our business and results of operations. In addition, many of the factors that cause, or lead to, delays in clinical trials may ultimately lead to the denial of marketing approval of any of our product candidates. If any of these occur, our business, financial condition, results of operations, stock price and prospects may be materially harmed.

We anticipate that our product candidates will be used in combination with third-party drugs, some of which are still in development, and we have limited or no control over the supply, regulatory status, or regulatory approval of such drugs.

Our product candidates are intended to be administered in combination with checkpoint blockade drugs, a class of drugs that are intended to stop tumor cells from "switching off" an immune system attack against themselves. We have entered into an agreement with BMS for the supply of nivolumab, its anti-PD-1 therapy, for use in connection with our current Phase 1/2 clinical trial with RP1. We have also entered into a clinical collaboration agreement with Regeneron which includes the supply of cemiplimab, its anti-PD-1 therapy, for clinical trials conducted under the agreement. The first planned clinical trial to be conducted under the agreement is a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, compared to cemiplimab alone, in approximately 240 patients with CSCC. We may enter into additional agreements for the supply of anti-PD-1 products for use in connection with the development of one or more of our product candidates. Our ability to develop and ultimately commercialize our product candidates used in combination with nivolumab, cemiplimab or any other checkpoint blockade therapy will depend on our ability to access such drugs on commercially reasonable terms for the clinical trials and their availability for use with the commercialized product, if approved. We cannot be certain that current or potential future commercial relationships will provide us with a steady supply of such drugs on commercially reasonable terms or at all.

Any failure to maintain or enter into new successful commercial relationships, or the expense of purchasing checkpoint blockade therapies in the market, may delay our development timelines, increase

our costs and jeopardize our ability to develop our product candidates as commercially viable therapies. If any of these occur, our business, financial condition, results of operations, stock price and prospects may be materially harmed.

Moreover, the development of product candidates for use in combination with another product or product candidate may present challenges that are not faced for single agent product candidates. We are developing RP1 and our other product candidates for use in combination with anti-PD-1 or anti-PD-L1 therapies and may develop RP1 or our other product candidates for use with other therapies. The FDA may require us to use more complex clinical trial designs in order to evaluate the contribution of each product and product candidate to any observed effects. It is possible that the results of these trials could show that any positive previous trial results are attributable to the combination therapy and not our product candidates. Moreover, following product approval, the FDA may require that products used in conjunction with each other be cross labeled for combined use. To the extent that we do not have rights to the other product, this may require us to work with a third party to satisfy such a requirement. Moreover, developments related to the other product may impact our clinical trials for the combination as well as our commercial prospects should we receive marketing approval. Such developments may include changes to the other product's safety or efficacy profile, changes to the availability of the approved product, and changes to the standard of care.

In the event that BMS, Regeneron or any future collaborator or supplier cannot continue to supply their products on commercially reasonable terms, we would need to identify alternatives for accessing an anti-PD-1 therapy. Additionally, should the supply of products from BMS, Regeneron or any future collaborator or supplier be interrupted, delayed or otherwise be unavailable to us, our clinical trials may be delayed. In the event we are unable to source a supply of an alternative anti-PD-1 therapy, or are unable to do so on commercially reasonable terms, our business, financial condition, results of operations, stock price and prospects may be materially harmed.

If we fail to develop additional product candidates, our commercial opportunity could be limited.

We expect initially to develop our lead product candidate, RP1. A key part of our strategy, however, is to pursue clinical development of additional product candidates, including RP2 and RP3. Developing, obtaining marketing approval for, and commercializing additional product candidates will require substantial additional funding beyond the net proceeds of this offering and will be subject to the risks of failure inherent in medical product development. We cannot assure you that we will be able to successfully advance any of these additional product candidates through the development process.

Even if we obtain approval from the FDA or comparable foreign regulatory authorities to market additional product candidates for the treatment of solid tumors, we cannot assure you that any such product candidates will be successfully commercialized, widely accepted in the marketplace, or more effective than other commercially available alternatives. If we are unable to successfully develop and commercialize additional product candidates our commercial opportunity may be limited and our business, financial condition, results of operations, stock price and prospects may be materially harmed.

Risks related to regulatory approval

Even if our development efforts are successful, we may not obtain regulatory approval for any of our product candidates in the United States or other jurisdictions, which would prevent us from commercializing our product candidates. Even if we obtain regulatory approval for our product candidates, any such approval may be subject to limitations, including with respect to the approved indications or patient populations, which could impair our ability to successfully commercialize our product candidates.

We are not permitted to market or promote or sell any of our product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy for that indication. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities and clinical trial sites by, the regulatory authorities. If we do not receive approval from the FDA and comparable foreign regulatory authorities for any of our product candidates, we will not be able to commercialize such product candidates in the United States or in other jurisdictions. If significant delays in obtaining approval for and commercializing our product candidates occur in any jurisdictions, our business, financial condition, results of operations, stock price and prospects will be materially harmed. Even if our product candidates are approved, they may:

- be subject to limitations on the indicated uses or patient populations for which they may be marketed, distribution restrictions, or other conditions of approval;
- contain significant safety warnings, including boxed warnings, contraindications, and precautions;
- not be approved with label statements necessary or desirable for successful commercialization; or
- contain requirements for costly post-market testing and surveillance, or other requirements, including the submission of a risk evaluation and mitigation strategy, or REMS, to monitor the safety or efficacy of the products.

We have not previously submitted a BLA to the FDA, or a similar marketing application to comparable foreign regulatory authorities, for any product candidate, and we can provide no assurance that will ultimately be successful in obtaining regulatory approval for claims that are necessary or desirable for successful marketing, or at all.

The regulatory approval processes of the FDA and comparable foreign regulatory authorities are lengthy, time consuming and inherently unpredictable. If we are not able to obtain, or experience delays in obtaining, required regulatory approvals, we will not be able to commercialize our product candidates as expected, and our ability to generate revenue may be materially impaired.

The time required to obtain approval by the FDA and comparable foreign regulatory authorities is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. 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. For example, the FDA verbally informed us on March 23, 2018 and confirmed in writing on April 18, 2018 that our Phase 1/2 clinical trial of RP1 is on clinical hold and may not commence at U.S. sites until we submit the results of a preclinical toxicology and biodistribution study with a longer follow-up period than

was required by the regulatory authorities in the United Kingdom and the FDA clears us to proceed with the clinical trial. We anticipate that we will be submitting the results from this study to the FDA in the third quarter of 2018. These regulatory requirements may require us to amend our clinical trial protocols, conduct additional preclinical studies or clinical trials that may require regulatory or IRB approval, or otherwise cause delays in the approval or rejection of an application. Any delay in obtaining or failure to obtain required approvals could materially adversely affect our ability to generate revenue from the particular product candidate, which may materially harm our business, financial condition, results of operations, stock price and prospects.

Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. The number and types of preclinical studies and clinical trials that will be required for regulatory approval also varies depending on the product candidate, the disease or condition that the product candidate is designed to address, and the regulations applicable to any particular product candidate. 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, and there may be varying interpretations of data obtained from preclinical studies or clinical trials, any of which may cause delays or limitations in the approval or a decision not to approve an application. It is possible that our product candidates will never obtain the appropriate regulatory approvals necessary for us to commence product sales.

If we experience delays in obtaining approval, if we fail to obtain approval of a product candidate or if the label for a product candidate does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate, the commercial prospects for such product candidate may be harmed and our ability to generate revenues from that product candidate may be materially impaired.

The FDA or a comparable foreign regulatory authority may determine that our product candidates have undesirable side effects that could delay or prevent their regulatory approval or commercialization.

To date, the most commonly reported adverse events observed for RP1 are local erythematous and inflammatory reactions and systemic fevers and chills. However, there can be no assurance that additional undesirable side effects or serious adverse events will not be caused by or associated with RP1 or our other product candidates as they continue through or enter clinical development. Serious adverse events or undesirable side effects caused by our product candidates could cause us, IRBs, and other reviewing entities or regulatory authorities to interrupt, delay, or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. For example, if concerns are raised regarding the safety of a new therapeutic as a result of undesirable side effects identified during clinical or preclinical testing, the FDA or comparable foreign regulatory authority may order us to cease further development, decline to approve product candidate or issue a letter requesting additional data or information prior to making a final decision regarding whether or not to approve the product candidate. The FDA or comparable foreign regulatory authorities, or IRBs and other reviewing entities, may also require, or we may voluntarily develop, strategies for managing adverse events during clinical development, which could include restrictions on our enrollment criteria, the use of stopping criteria, adjustments to a study's design, or the monitoring of safety data by a data monitoring committee, among other strategies. The FDA or a comparable foreign regulatory authority requests for additional data or information could also result in substantial delays in the approval of our product candidates.

Undesirable side effects caused by any of our product candidates could also result in denial of regulatory approval by the FDA or comparable foreign regulatory authorities for any or all targeted indications or the inclusion of unfavorable information in our product labeling, such as limitations on the indicated uses for which the products may be marketed or distributed, a label with significant safety warnings, including boxed warnings, contraindications, and precautions, a label without statements necessary or desirable for successful commercialization, or may result in requirements for costly post-marketing testing and surveillance, or other requirements, including REMS, to monitor the safety or efficacy of the products, and in turn prevent us from commercializing and generating revenues from the sale of our product candidates. Undesirable side effects may limit the potential market for any approved products or could result in the discontinuation of the sales and marketing of the product, or withdrawal of product approvals. Later discovered undesirable side effects may further result in the imposition of a REMS, label revisions, post-approval study requirements, or other testing and surveillance.

If any of our product candidates is associated with serious adverse events or undesirable side effects or have properties that are unexpected, we may need to abandon development or limit development of that product candidate to certain uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. The therapeutic-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may materially harm our business, financial condition, results of operations, stock price and prospects.

Changes in product candidate manufacturing or formulation may result in additional costs or delay.

As product candidates are developed through preclinical studies to later-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize processes and results. Any of these changes could cause our product candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the altered materials. Such changes may also require additional testing, or notification to, or approval by the FDA or a comparable foreign regulatory authority. This could delay completion of clinical trials, require the conduct of bridging clinical trials or studies, require the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates and/or jeopardize our ability to commence product sales and generate revenue.

Regulatory approval by the FDA or comparable foreign regulatory authorities is limited to those specific indications and conditions for which approval has been granted, and we may be subject to substantial fines, criminal penalties, injunctions, or other enforcement actions if we are determined to be promoting the use of our products for unapproved or "off-label" uses, resulting in damage to our reputation and business.

We must comply with requirements concerning advertising and promotion for any product candidates for which we obtain marketing approval. Promotional communications with respect to therapeutics are subject to a variety of legal and regulatory restrictions and continuing review by the FDA, Department of Justice, Department of Health and Human Services' Office of Inspector General, state attorneys general, members of Congress, and the public. When the FDA or comparable foreign regulatory authorities issue regulatory approval for a product candidate, the regulatory approval is limited to those specific uses and indications for which a product is approved. If we are not able to obtain FDA approval for desired uses or indications for our product candidates, we may not market or promote them for those indications and uses, referred to as off-label uses, and our business, financial condition, results of operations, stock price and prospects

will be materially harmed. We also must sufficiently substantiate any claims that we make for our products, including claims comparing our products to other companies' products, and must abide by the FDA's strict requirements regarding the content of promotion and advertising.

While physicians may choose to prescribe products for uses that are not described in the product's labeling and for uses that differ from those tested in clinical trials and approved by the regulatory authorities we are prohibited from marketing and promoting the products for indications and uses that are not specifically approved by the FDA. These off-label uses are common across medical specialties and may constitute an appropriate treatment for some patients in varied circumstances. Regulatory authorities in the United States generally do not restrict or regulate the behavior of physicians in their choice of treatment within the practice of medicine. Regulatory authorities do, however, restrict communications by biopharmaceutical companies concerning off-label use.

If we are found to have impermissibly promoted any of our product candidates, we may become subject to significant liability and government fines. The FDA and other agencies actively enforce the laws and regulations regarding product promotion, particularly those prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted a product may be subject to significant sanctions. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

In the United States, engaging in the impermissible promotion of our products, following approval, for off-label uses can also subject us to false claims and other litigation under federal and state statutes. These include fraud and abuse and consumer protection laws, which can lead to civil and criminal penalties and fines, agreements with governmental authorities that materially restrict the manner in which we promote or distribute therapeutic products and conduct our business. These restrictions could include corporate integrity agreements, suspension or exclusion from participation in federal and state healthcare programs, and suspension and debarment from government contracts and refusal of orders under existing government contracts. These False Claims Act lawsuits against manufacturers of drugs and biologics have increased significantly in volume and breadth, leading to several substantial civil and criminal settlements, up to $3.0 billion, pertaining to certain sales practices and promoting off-label uses. In addition, False Claims Act lawsuits may expose manufacturers to follow-on claims by private payers based on fraudulent marketing practices. This growth in litigation has increased the risk that a biopharmaceutical company will have to defend a false claim action, pay settlement fines or restitution, as well as criminal and civil penalties, agree to comply with burdensome reporting and compliance obligations, and be excluded from Medicare, Medicaid, or other federal and state healthcare programs. If we do not lawfully promote our approved products, if any, we may become subject to such litigation and, if we do not successfully defend against such actions, those actions may have a material adverse effect on our business, financial condition, results of operations, stock price and prospects.

In the United States, the promotion of biopharmaceutical products are subject to additional FDA requirements and restrictions on promotional statements. If after one or more of our product candidates obtains marketing approval the FDA determines that our promotional activities violate its regulations and policies pertaining to product promotion, it could request that we modify our promotional materials or subject us to regulatory or other enforcement actions, including issuance of warning letters or untitled letters, suspension or withdrawal of an approved product from the market, requests for recalls, payment of civil fines, disgorgement of money, imposition of operating restrictions, injunctions or criminal prosecution, and other enforcement actions. Similarly, industry codes in foreign jurisdictions may prohibit companies

from engaging in certain promotional activities and regulatory agencies in various countries may enforce violations of such codes with civil penalties. If we become subject to regulatory and enforcement actions our business, financial condition, results of operations, stock price and prospects will be materially harmed.

Even if our product candidates receive regulatory approval, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense and limit how we manufacture and market our products.

Any product candidate for which we obtain marketing approval will be subject to extensive and ongoing requirements of and review by the FDA and comparable foreign regulatory authorities, including requirements related to the manufacturing processes, post-approval clinical data, labeling, packaging, distribution, adverse event reporting, storage, recordkeeping, export, import, advertising, marketing, and promotional activities for such product. These requirements further include submissions of safety and other post-marketing information, including manufacturing deviations and reports, registration and listing requirements, the payment of annual fees, continued compliance with cGMP requirements relating to manufacturing, quality control, quality assurance, and corresponding maintenance of records and documents, and good clinical practices, or GCPs, for any clinical trials that we conduct post-approval.

The FDA and comparable foreign regulatory authorities will continue to closely monitor the safety profile of any product even after approval. If the FDA or comparable foreign regulatory authorities become aware of new safety information after approval of any of our product candidates, they may withdraw approval, issue public safety alerts, require labeling changes or establishment of a REMS or similar strategy, impose significant restrictions on a product's indicated uses or marketing, or impose ongoing requirements for potentially costly post-approval studies or post-market surveillance. Any such restrictions could limit sales of the product.

We and any of our suppliers or collaborators, including our contract manufacturers, could be subject to periodic unannounced inspections by the FDA to monitor and ensure compliance with cGMPs and other FDA regulatory requirements. Application holders must further notify the FDA, and depending on the nature of the change, obtain FDA pre-approval for product and manufacturing changes.

In addition, later discovery of previously unknown adverse events or that the product is less effective than previously thought or other problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements both before and after approval, may yield various negative results, including:

- restrictions on manufacturing, distribution, or marketing of such products;
- restrictions on the labeling, including required additional warnings, such as black boxed warnings, contraindications, precautions, and restrictions on the approved indication or use;
- modifications to promotional pieces;
- issuance of corrective information;
- requirements to conduct post-marketing studies or other clinical trials;
- clinical holds or termination of clinical trials;
- requirements to establish or modify a REMS or similar strategy;
- changes to the way the product candidate is administered;
- liability for harm caused to patients or subjects;
- reputational harm;

- the product becoming less competitive;
- warning, untitled, or cyber letters;
- suspension of marketing or withdrawal of the products from the market;
- regulatory authority issuance of safety alerts, Dear Healthcare Provider letters, press releases, or other communications containing warnings or other safety information about the product candidate;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recalls of products;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure or detention;
- FDA debarment, suspension and debarment from government contracts, and refusal of orders under existing government contracts, exclusion from federal healthcare programs, consent decrees, or corporate integrity agreements; or
- injunctions or the imposition of civil or criminal penalties, including imprisonment.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, or could substantially increase the costs and expenses of commercializing such product, which in turn could delay or prevent us from generating significant revenues from its marketing and sale. Any of these events could further have other material and adverse effects on our operations and business and could adversely impact our business, financial condition, results of operations, stock price and prospects.

The FDA's policies or those of comparable foreign regulatory authorities may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates, limit the marketability of our product candidates, or impose additional regulatory obligations on us. Changes in medical practice and standard of care may also impact the marketability of our product candidates.

If we are slow or unable to adapt to changes in existing requirements, standards of care, or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and be subject to regulatory enforcement action.

Should any of the above actions take place, we could be prevented from or significantly delayed in achieving profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our operations and business and could adversely impact our business, financial condition, results of operations, stock price and prospects.

Obtaining and maintaining marketing approval for our product candidates in one jurisdiction would not mean that we will be successful in obtaining marketing approval of that product candidate in other jurisdictions, which could prevent us from marketing our products internationally.

Obtaining and maintaining marketing approval of our product candidates in one jurisdiction would not guarantee that we will be able to obtain or maintain marketing approval in any other jurisdiction, while a failure or delay in obtaining marketing approval in one jurisdiction may have a negative effect on the marketing approval process in others. For example, even if the FDA grants marketing approval of a product candidate, comparable foreign regulatory authorities must also approve the manufacturing, marketing and promotion of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical studies or clinical trials, as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

Regulatory authorities in jurisdictions outside of the United States have requirements for approval of product candidates with which we must comply prior to marketing in those jurisdictions. Obtaining foreign marketing approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of RP1 and our other product candidates will be harmed. If we obtain approval for any product candidate and ultimately commercialize that product in foreign markets, we would be subject to additional risks and uncertainties, including the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements and the reduced protection of intellectual property rights in some foreign countries.

Risks related to commercialization

If we are unable to successfully commercialize any product candidate for which we receive regulatory approval, or experience significant delays in doing so, our business will be materially harmed.

If we are successful in obtaining marketing approval from applicable regulatory authorities for RP1 or any of our other product candidates, our ability to generate revenues from our product candidates will depend on our success in:

- launching commercial sales of our product candidates, whether alone or in collaboration with others;
- receiving an approved label with claims that are necessary or desirable for successful marketing, and that does not contain safety or other limitations that would impede our ability to market the product candidates;
- creating market demand for our product candidates through marketing, sales and promotion activities;
- hiring, training, and deploying a sales force or contracting with third parties to commercialize product candidates in the United States;
- manufacturing product candidates in sufficient quantities and at acceptable quality and cost to meet commercial demand at launch and thereafter;

- establishing and maintaining agreements with wholesalers, distributors, and group purchasing organizations on commercially reasonable terms;
- creating partnerships with, or offering licenses to, third parties to promote and sell product candidates in foreign markets where we receive marketing approval;
- maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- achieving market acceptance of our product candidates by patients, the medical community, and third-party payors;
- achieving appropriate reimbursement for our product candidates;
- effectively competing with other therapies; and
- maintaining a continued acceptable safety profile of our product candidates following launch.

To the extent we are not able to do any of the foregoing, our business, financial condition, results of operations, stock price and prospects will be materially harmed.

We face significant competition from other biopharmaceutical and biotechnology companies, academic institutions, government agencies, and other research organizations, which may result in others discovering, developing or commercializing products more quickly or marketing them more successfully than us. If their product candidates are shown to be safer or more effective than ours, our commercial opportunity may be reduced or eliminated.

The development and commercialization of cancer immunotherapy products is characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary rights. We face competition with respect to our current product candidates, and will face competition with respect to any product candidates that we may seek to develop or commercialize in the future, from major biopharmaceutical companies, specialty biopharmaceutical companies, and biotechnology companies worldwide. There are a number of large biopharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of products for the treatment of solid tumors, including oncolytic immunotherapy and cancer vaccine approaches. Potential competitors also include academic institutions, government agencies, and other public and private research organizations that conduct research, seek patent protection, and establish collaborative arrangements for research, development, manufacturing, and commercialization.

While our product candidates are intended to be used in combination with other drugs with different mechanisms of action, if and when marketed they will still compete with a number of drugs that are currently marketed or in development that also target cancer. To compete effectively with these drugs, our product candidates will need to demonstrate advantages in clinical efficacy and safety compared to these competitors when used alone or in combination with other drugs.

Our commercial opportunities could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are easier to administer or are less expensive alone or in combination with other therapies than any products that we may develop alone or in combination with other therapies. Our competitors also may obtain FDA or comparable foreign regulatory authorities' approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the

market. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors coverage decisions.

Many of the companies with which we are competing or may compete in the future have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals, and marketing approved products than we do. Mergers and acquisitions in the biopharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in developing or acquiring technologies complementary to, or necessary for, our programs. If we are unable to successfully compete with these companies our business, financial condition, results of operations, stock price and prospects may be materially harmed.

If we are unable to establish effective marketing, sales and distribution capabilities or enter into agreements with third parties to market and sell our product candidates, if they are approved, the revenues that we generate may be limited and we may never become profitable.

We currently do not have a commercial infrastructure for the marketing, sale, and distribution of our cancer immunotherapies. If and when our product candidates receive marketing approval, we intend to commercialize our product candidates on our own in the United States and potentially with pharmaceutical or biotechnology partners in other geographies. In order to commercialize our products, we must build our marketing, sales, and distribution capabilities or make arrangements with third parties to perform these services. We may not be successful in doing so. Should we decide to move forward in developing our own marketing capabilities, we may incur expenses prior to product launch or even approval in order to recruit a sales force and develop a marketing and sales infrastructure. If a commercial launch is delayed as a result of the FDA or comparable foreign regulatory authority requirements or other reasons, we would incur these expenses prior to being able to realize any revenue from sales of our product candidates. Even if we are able to effectively hire a sales force and develop a marketing and sales infrastructure, our sales force and marketing teams may not be successful in commercializing our product candidates. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

We may also or alternatively decide to collaborate with third-party marketing and sales organizations to commercialize any approved product candidates in the United States, in which event, our ability to generate product revenues may be limited. To the extent we rely on third parties to commercialize any products for which we obtain regulatory approval, we may receive less revenues than if we commercialized these products ourselves, which could materially harm our prospects. In addition, we would have less control over the sales efforts of any other third parties involved in our commercialization efforts, and could be held liable if they failed to comply with applicable legal or regulatory requirements.

We have no prior experience in the marketing, sale, and distribution of biopharmaceutical products, and there are significant risks involved in building and managing a commercial infrastructure. The establishment and development of commercial capabilities, including compliance plans, to market any products we may develop will be expensive and time consuming and could delay any product launch, and we may not be able to successfully develop this capability. We will have to compete with other biopharmaceutical and biotechnology companies, including oncology-focused companies, to recruit, hire, train, manage, and retain marketing and sales personnel, which is expensive and time consuming and

could delay any product launch. Developing our sales capabilities may also divert resources and management attention away from product development.

In the event we are unable to develop a marketing and sales infrastructure, we may not be able to commercialize our product candidates in the United States or elsewhere, which could limit our ability to generate product revenues and materially harm our business, financial condition, results of operations, stock price and prospects. Factors that may inhibit our efforts to commercialize our product candidates include:

- the inability to recruit, train, manage, and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe our product candidates;
- our inability to effectively oversee a geographically dispersed sales and marketing team;
- the costs associated with training sales and marketing personnel on legal and regulatory compliance matters and monitoring their actions;
- an inability to secure adequate coverage and reimbursement by government and private health plans;
- the clinical indications for which the products are approved and the claims that we may make for the products;
- limitations or warnings, including distribution or use restrictions, contained in the products' approved labeling;
- any distribution and use restrictions imposed by the FDA or comparable foreign regulatory authorities or to which we agree as part of a mandatory REMS or voluntary risk management plan;
- liability for sales or marketing personnel who fail to comply with the applicable legal and regulatory requirements;
- 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 or engaging a contract sales organization.

Our product candidates are based on a novel approach to the treatment of cancer, which makes it difficult to predict the time and cost of product candidate development.

We have concentrated all of our research and development efforts on product candidates based on our Immulytic platform, and our future success depends on the successful development of this therapeutic approach. There can be no assurance that any development problems we experience in the future will not cause significant delays or unanticipated costs, or that such development problems can be solved. Should we encounter development problems, including unfavorable preclinical or clinical trial results, the FDA and foreign regulatory authorities may refuse to approve our product candidates, or may require additional information, tests, or trials, which could significantly delay product development and significantly increase our development costs. Moreover, even if we are able to provide the requested information or trials to the FDA, there would be no guarantee that the FDA would accept them or approve our product candidates. We may also experience delays in developing a sustainable, reproducible and scalable manufacturing process,

or developing or qualifying and validating product release assays, other testing and manufacturing methods, and our equipment and facilities in a timely manner, which may prevent us from completing our clinical trials or commercializing our product candidates on a timely or profitable basis, if at all.

In addition, the clinical trial requirements of the FDA and comparable foreign regulatory authorities and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use and market of the potential products. The FDA and comparable foreign regulatory authorities have limited experience with the approval of oncolytic immunotherapies. Only one oncolytic immunotherapy, T-Vec, has received FDA approval to date. Any product candidates that are approved may be subject to extensive post-approval regulatory requirements, including requirements pertaining to manufacturing, distribution, and promotion. We may need to devote significant time and resources to compliance with these requirements.

If our product candidates do not achieve broad market acceptance, the revenues that we generate from their sales may be limited, and we may never become profitable.

We have never commercialized a product candidate for any indication. Even if our product candidates are approved by the appropriate regulatory authorities for marketing and sale, they may not gain acceptance among physicians, patients, third-party payors, and others in the medical community. If any product candidates for which we obtain regulatory approval do not gain an adequate level of market acceptance, we could be prevented from or significantly delayed in achieving profitability. Market acceptance of our product candidates by the medical community, patients, and third-party payors will depend on a number of factors, some of which are beyond our control. For example, physicians are often reluctant to switch their patients and patients may be reluctant to switch from existing therapies even when new and potentially more effective or safer treatments enter the market.

Efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may not be successful. If any of our product candidates is approved but does not achieve an adequate level of market acceptance, we could be prevented from or significantly delayed in achieving profitability. The degree of market acceptance of any of our product candidates will depend on a number of factors, including:

- the efficacy of our product candidates in combination with marketed checkpoint blockade drugs;
- the commercial success of the checkpoint blockade drugs with which our products are co-administered;
- the prevalence and severity of adverse events associated with our product candidates or those products with which they are co-administered;
- the clinical indications for which the products are approved and the approved claims that we may make for the products;
- limitations or warnings contained in the product's FDA-approved labeling or those of comparable foreign regulatory authorities, including potential limitations or warnings for our product candidates that may be more restrictive than other competitive products;
- changes in the standard of care for the targeted indications for our product candidates, which could reduce the marketing impact of any claims that we could make following FDA approval or approval by comparable foreign regulatory authorities, if obtained;

- the relative convenience and ease of administration of our product candidates and any products with which they are co-administered;
- the cost of treatment compared with the economic and clinical benefit of alternative treatments or therapies;
- the availability of adequate coverage or reimbursement by third parties, such as insurance companies and other healthcare payors, and by government healthcare programs, including Medicare and Medicaid;
- the price concessions required by third-party payors to obtain coverage;
- the extent and strength of our marketing and distribution of our product candidates;
- the safety, efficacy, and other potential advantages over, and availability of, alternative treatments already used or that may later be approved;
- distribution and use restrictions imposed by the FDA or comparable foreign regulatory authorities with respect to our product candidates or to which we agree as part of a REMS or voluntary risk management plan;
- the timing of market introduction of our product candidates, as well as competitive products;
- our ability to offer our product candidates for sale at competitive prices;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the extent and strength of our third-party manufacturer and supplier support;
- the actions of companies that market any products with which our product candidates are co-administered;
- the approval of other new products;
- adverse publicity about our product candidates or any products with which they are co-administered, or favorable publicity about competitive products; and
- potential product liability claims.

The size of the potential market for our product candidates is difficult to estimate and, if any of our assumptions are inaccurate, the actual markets for our product candidates may be smaller than our estimates.

The potential market opportunities for our product candidates are difficult to estimate and will depend in large part on the drugs with which our product candidates are co-administered and the success of competing therapies and therapeutic approaches. In particular, the market opportunity for oncolytic immunotherapies is hard to estimate given that it is an emerging field with only one existing FDA-approved oncolytic immunotherapy, T-Vec, which has yet to enjoy broad market acceptance. Our estimates of the potential market opportunities are predicated on many assumptions, which may include industry knowledge and publications, third-party research reports, and other surveys. Although we believe that our internal assumptions are reasonable, these assumptions involve the exercise of significant judgment on the part of our management, are inherently uncertain, and their reasonableness has not been assessed by an

independent source. If any of the assumptions proves to be inaccurate, the actual markets for our product candidates could be smaller than our estimates of the potential market opportunities.

Negative developments in the field of immuno-oncology could damage public perception of RP1 or any of our other product candidates and negatively affect our business.

The commercial success of our product candidates will depend in part on public acceptance of the use of cancer immunotherapies. Adverse events in clinical trials of RP1 or our other product candidates or in clinical trials of others developing similar products and the resulting publicity, as well as any other negative developments in the field of immuno-oncology that may occur in the future, including in connection with competitor therapies, could result in a decrease in demand for RP1 or our other product candidates that we may develop. These events could also result in the suspension, discontinuation, or clinical hold of or modification to our clinical trials. If public perception is influenced by claims that the use of cancer immunotherapies is unsafe, whether related to our therapies or those of our competitors, our product candidates may not be accepted by the general public or the medical community and potential clinical trial subjects may be discouraged from enrolling in our clinical trials. As a result, we may not be able to continue or may be delayed in conducting our development programs.

As our product candidates consist of a modified virus, adverse developments in anti-viral vaccines or clinical trials of other oncolytic immunotherapy products based on viruses may result in a disproportionately negative effect for RP1 or our other product candidates as compared to other products in the field of immuno-oncology that are not based on viruses. Future negative developments in the field of immuno-oncology or the biopharmaceutical industry could also result in greater governmental regulation, stricter labeling requirements and potential regulatory delays in the testing or approvals of our products. Any increased scrutiny could delay or increase the costs of obtaining marketing approval for RP1 or our other product candidates.

Risks related to our financial position and need for additional capital

We are a clinical-stage biopharmaceutical company with a very limited operating history. We have incurred net losses since our inception and anticipate that we will continue to incur substantial and increasing net losses in the foreseeable future. We may never achieve or sustain profitability.

We are a clinical-stage biopharmaceutical company with a limited operating history, and we are early in our development efforts. We have no products approved for commercial sale and have not generated any revenue from product sales to date, and we continue to incur significant research and development and other expenses related to our ongoing operations. Investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, gain marketing approval and become commercially viable. We have financed our operations to date primarily through the sale of equity securities. Since our inception, most of our resources have been dedicated to the preclinical and clinical development of our Immulytic platform, RP1 and our other product candidates. The size of our future net losses will depend, in part, on our future expenses and our ability to generate revenue, if any.

We are not profitable and have incurred losses in each period since our inception. For the years ended March 31, 2017 and 2018, we reported a net loss of $7.7 million and $19.7 million, respectively. At March 31, 2018, we had an accumulated deficit of $28.9 million. We expect to continue to incur significant losses for the foreseeable future, and we expect these losses to increase as we continue our research and

development of, and seek marketing approvals for, RP1 and any additional product candidates we may develop.

Even if we succeed in receiving marketing approval for and commercialize RP1, we will continue to incur substantial research and development and other expenditures to develop and market additional potential products. We may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We have never generated any revenue from product sales, and our ability to generate revenue from product sales and become profitable will depend significantly on our success in achieving a number of goals.

We have no products approved for commercial sale, have not generated any revenue from product sales, and do not anticipate generating any revenue from product sales until after we have received marketing approval for the commercial sale of a product candidate, if ever. Our ability to generate revenue and achieve profitability depends significantly on our success in achieving a number of goals, including:

- completing research regarding, and preclinical and clinical development of RP1 and our other product candidates;
- obtaining marketing approvals for RP1 and our other product candidates for which we complete clinical trials;
- developing a sustainable and scalable manufacturing process for RP1 and our other product candidates, including establishing and maintaining commercially viable supply and manufacturing relationships with third parties;
- launching and commercializing RP1 and our other product candidates for which we obtain marketing approvals, either directly or with a collaborator or distributor;
- obtaining market acceptance of RP1 and our other product candidates as viable treatment options;
- addressing any competing technological and market developments;
- identifying, assessing, acquiring and developing new product candidates;
- negotiating favorable terms in any collaboration, licensing, or other arrangements into which we may enter;
- obtaining, maintaining, protecting, and expanding our portfolio of intellectual property rights, including patents, trade secrets, and know-how; and
- attracting, hiring, and retaining qualified personnel.

Even if our product candidates or any future product candidates that we develop are approved for commercial sale, we anticipate incurring significant costs associated with commercializing any such product candidate. Our expenses could increase beyond expectations if we are required by the FDA or comparable foreign regulatory authorities to change our manufacturing processes or assays, or to perform clinical, nonclinical, or other types of studies in addition to those that we currently anticipate.

If we are successful in obtaining regulatory approvals to market RP1 or our other product candidates, our revenue will be dependent, in part, upon the size of the markets in the territories for which we gain marketing approval, the accepted price for the product, the ability to get reimbursement at any price, and whether we own the commercial rights for that territory. If the number of our addressable patients is not as significant as we estimate, the indication approved by regulatory authorities is narrower than we expect, the labels for our product candidates contain significant safety warnings, regulatory authorities impose burdensome or restrictive distribution requirements, or the reasonably accepted patient population for treatment is narrowed by competition, physician choice or treatment guidelines, we may not generate significant revenue from sales of such products, even if approved. If we are not able to generate revenue from the sale of any approved products, we could be prevented from or significantly delayed in achieving profitability.

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

Our operations have consumed substantial amounts of cash since inception. At March 31, 2018, our cash and cash equivalents and short-term investments were $61.6 million. We expect to continue to spend substantial amounts to continue the clinical and preclinical development of RP1 and our other product candidates. Accordingly, we will need to obtain substantial additional funds to achieve our business objectives. If we are able to gain marketing approval of any product candidate, we will require significant additional amounts of cash in order to launch and commercialize such product. In addition, other unanticipated costs may arise.

Our future capital requirements depend on many factors, including:

- the scope, progress, results and costs of researching and developing RP1 and our other product candidates, and conducting preclinical studies and clinical trials;
- the timing of, and the costs involved in, obtaining marketing approvals for RP1 and our other product candidates if clinical trials are successful;
- the success of any collaborations;
- the cost of commercialization activities for any approved product, including marketing, sales and distribution costs;
- the cost and timing of establishing, equipping, and operating our planned manufacturing facility;
- the cost of manufacturing RP1 and our other product candidates for clinical trials in preparation for marketing approval and commercialization;
- our ability to establish and maintain strategic licensing or other arrangements and the financial terms of such agreements;
- the costs involved in preparing, filing, prosecuting, maintaining, expanding, defending and enforcing patent claims, including litigation costs and the outcome of such litigation;
- the timing, receipt, and amount of sales of, or royalties on, our future products, if any; and
- the emergence of competing cancer therapies and other adverse market developments.

We do not have any committed external source of funds or other support for our development efforts. Until we can generate sufficient product revenue to finance our cash requirements, which we may never do, we expect to finance our future cash needs through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing or distribution arrangements. Based on our research and development plans, we expect that the net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, will enable us to fund our planned operating expenses and capital expenditure requirements into the second half of 2021. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. In addition, because the design and outcome of our planned and anticipated clinical trials is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of RP1 or our other product candidates.

Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates.

To the extent that we raise additional capital through the sale of common stock or securities convertible or exchangeable into common stock, your ownership interest will be diluted. Debt financing, if available, would increase our fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we are unable to raise additional funds through equity or debt financings when needed, we may be required to grant rights to develop and market one or more of our product candidates or technologies that we would otherwise prefer to develop and market ourselves.

Risks related to intellectual property

If we are unable to obtain, maintain and protect our intellectual property rights for our technology and product candidates, or if our intellectual property rights are inadequate, our competitive position could be harmed.

Our commercial success will depend in part on our ability to obtain and maintain patent and other intellectual property protection in the United States and other countries with respect to our technology, Immulytic platform, RP1 and our other product candidates. We rely on trade secret, patent, copyright and trademark laws, and confidentiality, licensing and other agreements with employees and third parties, all of which offer only limited protection. We seek to protect our proprietary position by filing and prosecuting patent applications in the United States and abroad related to our technology and product candidates.

The patent positions of biotechnology and pharmaceutical companies generally are highly uncertain, involve complex legal and factual questions and have in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our licensed patents and any patents we own in the future are highly uncertain. The steps we have taken to protect our proprietary rights may not be adequate to preclude misappropriation of our proprietary information or infringement of our intellectual property rights, both inside and outside of the United States.

Further, the examination process may require us to narrow the claims for our pending patent applications, which may limit the scope of patent protection that may be obtained if these applications issue. The scope of a patent may also be reinterpreted after issuance. The rights that may be granted under our future

issued patents may not provide us with the proprietary protection or competitive advantages we are seeking. If we are unable to obtain and maintain patent protection for our technology or for RP1 or our other product candidates, or if the scope of the patent protection obtained is not sufficient, our competitors could develop and commercialize products similar or superior to ours, and our ability to successfully commercialize RP1 or our other product candidates and future technologies may be adversely affected. It is also possible that we will fail to identify patentable aspects of inventions made in the course of our development and commercialization activities before it is too late to obtain patent protection on them.

In addition, the patent prosecution process is expensive, time-consuming and complex, and we may not be able to file, prosecute, maintain, enforce or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, collaborators, and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. It is also possible that we will fail to identify patentable aspects of our research and development efforts in time to obtain patent protection.

For the core technology in our Immulytic platform and each of our product candidates, patent applications are pending under the Patent Cooperation Treaty, or PCT, and are currently at the international stage. As of July 9, 2018, we own five PCT patent applications and four U.S. provisional applications, none of which have been issued by any patent office or examined by any patent examining authority. Any future provisional patent applications are not eligible to become issued patents until, among other things, we file a non-provisional patent application within 12 months of filing of one or more of our related provisional patent applications. If we do not timely file any non-provisional patent applications, we may lose our priority date with respect to our provisional patent applications and any patent protection on the inventions disclosed in our provisional patent applications. Although we intend to timely file non-provisional patent applications relating to our provisional patent applications, we cannot predict whether any of our future patent applications will result in the issuance of patents that effectively protect our technology or RP1 or our other product candidates, or if any of our future issued patents will effectively prevent others from commercializing competitive products. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing or in some cases not at all until they are issued as a patent. Therefore, we cannot be certain that we were the first to make the inventions claimed in our pending patent applications, or that we were the first to file for patent protection of such inventions.

Our pending applications cannot be enforced against third parties practicing the inventions claimed in such applications unless and until a patent issues from such applications. Because the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, issued patents that we license from third parties or own in the future may be challenged in the courts or patent offices in the United States and abroad, including through opposition proceedings, derivation proceedings, *inter partes* review, interference proceedings or litigation. Such proceedings may result in the loss of patent protection, the narrowing of claims in such patents or the invalidity or unenforceability of such patents, which could limit our ability to stop others from using or commercializing similar or identical products, or limit the duration of the patent protection for our technology. Protecting against the unauthorized use of our patented inventions, trademarks and other intellectual property rights is expensive, time consuming, difficult and in some cases may not be possible. In some cases, it may be difficult or impossible to detect third-party

infringement or misappropriation of our intellectual property rights, even in relation to issued patent claims, and proving any such infringement may be even more difficult. If we are unable to obtain, maintain, and protect our intellectual property our competitive advantage could be harmed, and it could result in a material adverse effect on our business, financial condition, results of operations, stock price and prospects.

If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.

In addition to seeking patent protection, we also rely on other proprietary rights, including protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of our trade secrets and proprietary information, we enter into confidentiality agreements with our employees, consultants, collaborators and other third parties who have access to our trade secrets. Our agreements with employees also provide that any inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. However, we may not obtain these agreements in all circumstances, and individuals with whom we have these agreements may not comply with their terms. 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. In addition, in the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions.

Adequate remedies may not exist in the event of unauthorized use or disclosure of our confidential information including a breach of our confidentiality agreements. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time consuming, and the outcome is unpredictable. In addition, some courts in and outside of the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. The disclosure of our trade secrets or the independent development of our trade secrets by a competitor or other third party would impair our competitive position and may materially harm our business, financial condition, results of operations, stock price and prospects.

Third parties may in the future initiate legal proceedings alleging that we are infringing their intellectual property rights, the outcome of which would be uncertain and could harm our business.

Our commercial success depends on our ability and the ability of our current or future collaborators to develop, manufacture, market and sell RP1 and our other product candidates, and to use our related proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property and proprietary rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. We may become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our current and any other future product candidates, including interference proceedings, post-grant review, *inter partes* review and derivation proceedings before the U.S. Patent and Trademark Office, or USPTO. Third parties may assert infringement or other intellectual property claims against us based on existing patents or patents that may be granted in the future. If we are found to infringe a third party's intellectual property rights, and we are unsuccessful in demonstrating that such

intellectual property rights are invalid or unenforceable, we could be required to obtain a license from such third party to continue developing, manufacturing and commercializing RP1 and our other product candidates. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. We also could be forced, including by court order, to cease developing, manufacturing, and commercializing RP1 or our other product candidates. In addition, in any such proceeding or litigation, we could be found liable for significant monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations, stock price and prospects. Any claims by third parties that we have misappropriated their confidential information or trade secrets could have a similar material adverse effect on our business.

In addition, we are developing RP1 in combination with nivolumab and cemiplimab, which are covered by patents or licenses held by BMS and Regeneron, respectively, to which we do not have a license other than for use in connection with the applicable clinical trial. We also plan to develop our product candidates in combination with products developed by additional companies that are covered by patents or licenses held by those entities to which we do not have a license. In the event that a labeling instruction is required in product packaging recommending that combination, we could be accused of, or held liable for, infringement of the third-party patents covering the product candidate or product recommended for administration with RP1 or our other product candidates. In such a case, we could be required to obtain a license from the other company or institution to use the required or desired package labeling, which may not be available on commercially reasonable terms, or at all.

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

Filing, prosecuting and defending patents on our technology throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws and practices of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop and/or manufacture their own products, and may export otherwise infringing products to territories where we have patent protection but where enforcement is not as strong as that in the United States. These products may compete with our products and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the granting or enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceuticals, which could make it difficult for us to obtain patent rights or stop the infringement of our patents or marketing of competing products in violation of our intellectual property and proprietary rights generally in those countries. Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing 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 protect and enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property we develop or license.

In addition, the laws of certain foreign countries may not protect our rights to the same extent as the laws of the United States, and those foreign laws may also be subject to change. For example, methods of treatment and manufacturing processes may not be patentable in certain jurisdictions, and the requirements for patentability may differ in certain countries. Furthermore, biosimilar product manufacturers or other competitors may challenge the scope, validity and enforceability of our patents, requiring us to engage in complex, lengthy and costly litigation or proceedings.

Moreover, many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. 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 are 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 and results of operations may be adversely affected.

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

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payments and other similar provisions during the patent application process and to maintain patents after they are issued. For example, periodic maintenance fees, renewal fees, annuity fees and various other government fees on issued patents and patent applications often must be paid to the USPTO and foreign patent agencies over the lifetime of our licensed patents or any patents we own in the future. In certain circumstances, we may rely on future licensing partners to take the necessary action to comply with these requirements with respect to licensed intellectual property. Although an unintentional lapse can be cured for a period of time by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to obtain and maintain the patents and patent applications covering our products or procedures, we may not be able to stop a competitor from marketing products that are the same as or similar to RP1 or our other product candidates, which could have a material adverse effect on our business.

Changes to the patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect RP1 and our other product candidates.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity and is therefore costly, time consuming and inherently uncertain. Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs. Patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or the Leahy-Smith Act, signed into law on September 16, 2011, could

increase those 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 and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review, and derivation proceedings. After March 2013, under the Leahy-Smith Act, the United States transitioned to a first inventor to file system in which, assuming that the other statutory requirements are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. However, 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, stock price and prospects.

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

We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time-consuming and unsuccessful and have a material adverse effect on the success of our business.

Competitors may infringe any future licensed patents or any patent we own in the future or misappropriate or otherwise violate our intellectual property rights. We may also be required to defend against claims of infringement and our licensed patents and any patents we own in the future may become involved in priority or other intellectual property related disputes. To counter infringement or unauthorized use, litigation may be necessary in the future to enforce or defend our 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. Also, third parties may initiate legal proceedings against us to assert that we are infringing their intellectual property rights or to challenge the validity or scope of our owned or licensed intellectual property rights. These proceedings can be expensive and time consuming. Many of our current and potential competitors have the ability to dedicate substantially greater resources to conduct intellectual property related litigations or proceedings than we can. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property. Litigation and other intellectual property related proceedings could result in substantial costs and diversion of management resources, which could harm our business and financial results. In addition, in an infringement proceeding, a court may decide that a patent owned by or licensed to us is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or other intellectual property related 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 in the United States, there is a risk that some of our confidential information could be

compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments in any such proceedings. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of shares of our common stock. Any of the foregoing may have a material adverse effect our business, financial condition, results of operations, stock price and prospects.

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

Many of our employees, including our senior management team, were previously employed at, or consulted for, universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Our collaborators' employees may currently be or previously have been employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Some of these persons, including each member of our senior management team, executed proprietary rights, non-disclosure and non-competition agreements, or similar agreements, in connection with such previous employment or consulting agreements, that assigned ownership of intellectual property relating to work performed under such agreements to the contracting third party. Although we try to ensure that our employees do not use, claim as theirs, or misappropriate the intellectual property, proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used, claimed as theirs, misappropriated 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, stock price and prospects.

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

We could be subject to claims that we or our employees, including senior management, have inadvertently or otherwise used or disclosed alleged trade secrets or other confidential information of former employers or competitors or others. Although we try to ensure that our employees and consultants do not use the intellectual property, proprietary information, know-how or trade secrets of others in their work for us, we may be subject to claims that we caused an employee to breach the terms of their non-competition or non-solicitation agreement, or that we or these individuals have, inadvertently or otherwise, used or disclosed the alleged trade secrets or other proprietary information of a former employer or competitor or other party. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and could be a distraction to management. If our defenses to these claims fail, in addition to requiring us to pay monetary damages, a court could prohibit us from using technologies or features that are essential to RP1 and our other product candidates, if such technologies or features are found to incorporate or be derived from the trade secrets or other proprietary information of the former employers, competitors or other parties. An inability to incorporate such technologies or features would have a material adverse effect on our business, and may

prevent us from successfully commercializing RP1 and our other product candidates. In addition, we may lose valuable intellectual property rights or personnel as a result of such claims. Moreover, any such litigation or the threat thereof may adversely affect our ability to hire employees or consultants. A loss of key personnel or their work product could hamper or prevent our ability to develop and commercialize RP1 and our other product candidates, which could have an adverse effect on our business, financial condition, results of operations, stock price and prospects.

If we obtain any issued patents covering our technology, such patents could be found invalid or unenforceable if challenged in court or before the USPTO or comparable foreign regulatory authority.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering any of our technology, 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, 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, such as 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 RP1 and our other product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. For example, with respect to the validity of our licensed patents or any patents we obtain in the future, we cannot be certain that there is no invalidating prior art of which we, our or our licensing partner's patent counsel, and the patent examiner were unaware during prosecution. If a third party were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on RP1 and our other product candidates. Such a loss of patent protection could have a material adverse impact on our business.

Patent terms may be inadequate to protect our competitive position on our products for an adequate amount of time, and our product candidates for which we intend to seek approval as biological products may face competition sooner than anticipated.

Given the amount of time required for the development, testing and regulatory review of new product candidates, such as RP1 and our other product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, but no longer than 14 years from the product's approval date, which is limited to the approved indication (or any additional indications approved during the period of extension). However, the applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authorities in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to our patents, or may grant more limited extensions than we request. If this occurs, our competitors may be able to take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data and launch their products earlier than might otherwise be the case, which could have a material adverse effect on our business, financial condition, results of operations, stock price and prospects.

The enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, as part of the Patient Protection and Affordable Care Act, or ACA, created an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an existing brand product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product was approved under a BLA. Certain changes, however, and supplements to an approved BLA, and subsequent applications filed by the same sponsor, manufacturer, licensor, predecessor in interest, or other related entity do not qualify for the 12-year exclusivity period.

RP1 and our other product candidates are all biological product candidates. We anticipate being awarded market exclusivity for each of our biological product candidates that is subject to its own BLA for 12 years in the United States, 10 years in Europe and significant durations in other markets. However, the term of the patents that cover such product candidates may not extend beyond the applicable market exclusivity awarded by a particular country. For example, in the United States, if all of the patents that cover our particular biological product expire before the 12-year market exclusivity expires, a third party could submit a marketing application for a biosimilar product four years after approval of our biological product, the FDA could immediately review the application and approve the biosimilar product for marketing 12 years after approval of our biological product, and the biosimilar sponsor could then immediately begin marketing. Alternatively, a third party could submit a full BLA for a similar or identical product any time after approval of our biological product, and the FDA could immediately review and approve the similar or identical product for marketing and the third party could begin marketing the similar or identical product upon expiry of all of the patents that cover our particular biological product.

There is also a risk that this exclusivity could be changed in the future. For example, this exclusivity could be shortened due to congressional action or through other actions, including future proposed budgets, international trade agreements and other arrangements or proposals. Additionally, there is a risk that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for biosimilar competition sooner than anticipated. The extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. It is also possible that payers will give reimbursement preference to biosimilars over reference biologics, even absent a determination of interchangeability.

To the extent that we do not receive any anticipated periods of regulatory exclusivity for our product candidates or the FDA or foreign regulatory authorities approve any biosimilar, interchangeable, or other competing products to our product candidates, it could have a material adverse effect on our business, financial condition, results of operations, stock price and prospects.

Risks related to manufacturing and our reliance on third parties

We have agreements with BMS and Regeneron, and in the future may have agreements with other companies, to obtain the supply of anti-PD-1 therapies for the development of RP1 and our other product candidates. If our relationships with BMS, Regeneron, or any future collaborator or supplier are not successful, we may be delayed in completing the development of RP1 and our other product candidates.

We have entered into arrangements with BMS and Regeneron as part of our clinical development for RP1. BMS is providing nivolumab, its anti-PD-1 therapy, for use in our ongoing Phase 1/2 clinical trial with RP1 and Regeneron is providing cemiplimab, its anti-PD-1 therapy, for use in our planned randomized, controlled Phase 2 clinical trial with RP1 in approximately 240 patients with CSCC and other potential clinical trials. We may also enter into agreements with additional companies for the supply of anti-PD-1 therapies for use in the development of RP1 and our other product candidates. The outcome of these clinical trials is dependent both on the performance of our partners' products and product candidates and also on our partners' ability to deliver sufficient quantities of adequately produced product. Should any of our partners' products or product candidates fail to produce the results that we anticipate, we may have to rerun clinical trials for RP1 or our other product candidates or may otherwise be delayed in the commercialization of RP1 or our other product candidates. Similarly, should any partner fail to provide us with a product or product candidate that suits our requirements we may have to rerun clinical trials for RP1 or our other product candidates or may be otherwise delayed in the commercialization of RP1 or our other product candidates.

Our collaboration agreements with any future partners may not be successful, which could adversely affect our ability to develop and commercialize our product candidates.

We may in the future seek collaboration arrangements with other parties for the development or commercialization of our product candidates. The success of any collaboration arrangements may depend on the efforts and activities of our collaborators. Collaborators generally have significant discretion in determining the efforts and resources that they will apply to these arrangements. Disagreements between parties to a collaboration arrangement regarding clinical development and commercialization matters can lead to delays in the development process or commercializing the applicable product candidate and, in some cases, termination of the collaboration arrangement. These disagreements can be difficult to resolve if neither of the parties has final decision making authority.

Collaborations with biopharmaceutical companies and other third parties often are terminated or allowed to expire by the other party. Any such termination or expiration could adversely affect us financially and could harm our business reputation.

Any future collaborations we might enter into may pose a number of risks, including the following:

- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization of any product candidates that achieve regulatory approval or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;

- collaborators could fail to make timely regulatory submissions for a product candidate;
- collaborators may not comply with all applicable regulatory requirements or may fail to report safety data in accordance with all applicable regulatory requirements, which could subject them or us to regulatory enforcement actions;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- a collaborator with marketing and distribution rights to one or more of our product candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of such product candidate or product;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time consuming and expensive;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation; and
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability.

If any collaborations we might enter into in the future do not result in the successful development and commercialization of products or if one of our collaborators subsequently terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under such potential future collaboration. If we do not receive the funding we expect under the agreements, our development of our product candidates could be delayed and we may need additional resources to develop our product candidates and our product platform.

Additionally, if any future collaborator of ours is involved in a business combination, the collaborator might deemphasize or terminate development or commercialization of any product candidate licensed to it by us. If one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and our reputation in the business and financial communities could be adversely affected.

We face significant competition in seeking appropriate collaborators. Our ability to reach a definitive agreement for any collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors.

If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a product candidate, reduce or delay its development

program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to fund and undertake development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms, or at all. If we fail to enter into collaborations and do not have sufficient funds or expertise to undertake the necessary development and commercialization activities, we may not be able to further develop our product candidates or bring them to market or continue to develop our product platform and our business may be materially and adversely affected.

We rely, and expect to continue to rely, on third parties to conduct, supervise, and monitor our preclinical studies and clinical trials. If those third parties do not perform satisfactorily, including failing to meet deadlines for the completion of such trials or failing to comply with regulatory requirements, we may be unable to obtain regulatory approval for our product candidates or any other product candidates that we may develop in the future.

We rely on third-party CROs, study sites, and others to conduct, supervise, and monitor our preclinical studies and clinical trials for our product candidates and do not currently plan to independently conduct preclinical studies or clinical trials of any other potential product candidates. We expect to continue to rely on third parties, such as CROs, clinical data management organizations, medical institutions, and clinical investigators, to conduct our preclinical studies and clinical trials. Although we have agreements governing their activities, we have limited influence over their actual performance and control only certain aspects of their activities. The failure of these third parties to successfully carry out their contractual duties or meet expected deadlines could substantially harm our business because we may be delayed in completing or unable to complete the studies required to support future approval of our product candidates, or we may not obtain marketing approval for or commercialize our product candidates in a timely manner or at all. Moreover, these agreements might terminate for a variety of reasons, including a failure to perform by the third parties. If we need to enter into alternative arrangements our product development activities would be delayed and our business, financial condition, results of operations, stock price and prospects may be materially harmed.

Our reliance on these third parties for development activities will reduce our control over these activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory, and scientific standards and our reliance on third parties does not relieve us of our regulatory responsibilities. For example, we will remain responsible for ensuring that each of our trials is conducted in accordance with the general investigational plan and protocols for the trial. We must also ensure that our preclinical trials are conducted in accordance with the FDA's Good Laboratory Practice, or GLP, regulations, as appropriate. Moreover, the FDA and comparable foreign regulatory authorities require us to comply with standards, commonly referred to as GCPs for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of trial participants are protected. Regulatory authorities enforce these requirements through periodic inspections of trial sponsors, clinical investigators, and trial sites. If we or any of our third parties fail to comply with applicable GCPs or other regulatory requirements, we or they may be subject to enforcement or other legal actions, the data generated in our trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional studies.

In addition, we will be required to report certain financial interests of our third-party investigators if these relationships exceed certain financial thresholds or meet other criteria. The FDA or comparable foreign

regulatory authorities may question the integrity of the data from those clinical trials conducted by investigators who may have conflicts of interest.

We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our trials complies with the applicable regulatory requirements. In addition, our clinical trials must be conducted with product candidates that were produced under cGMP regulations. Failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process. We also are required to register certain clinical trials and post the results of certain completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in enforcement actions and adverse publicity.

The third parties with which we work may also have relationships with other entities, some of which may be our competitors, for whom they may also be conducting trials or other therapeutic development activities that could harm our competitive position. In addition, such third parties are not our employees, and except for remedies available to us under our agreements with such third parties we cannot control whether or not they devote sufficient time and resources to our ongoing clinical, non-clinical, and preclinical programs. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our preclinical studies or clinical trials in accordance with regulatory requirements or our stated protocols, if they need to be replaced or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our protocols, regulatory requirements or for other reasons, our trials may be repeated, extended, delayed, or terminated; we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates; we may not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates; or we or they may be subject to regulatory enforcement actions. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed. To the extent we are unable to successfully identify and manage the performance of third-party service providers in the future, our business, financial condition, results of operations, stock price and prospects may be materially harmed.

If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative providers or to do so on commercially reasonable terms. Switching or adding additional third parties involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays could occur, which could compromise our ability to meet our desired development timelines.

We also rely on other third parties to store and distribute our products for the clinical trials that we conduct. Any performance failure on the part of our distributors could delay clinical development, marketing approval, or commercialization of our product candidates, which could result in additional losses and deprive us of potential product revenue.

If the manufacturers upon which we rely fail to produce our product candidates in the volumes that we require on a timely basis, or to fail comply with stringent regulations applicable to biopharmaceutical manufacturers, we may face delays in the development and commercialization of, or be unable to meet demand for, our product candidates and may lose potential revenues.

Until our planned manufacturing facility is complete, we will continue to rely on third-party contract manufacturers to manufacture our clinical trial product supplies. There can be no assurance that our clinical development will not be limited, interrupted, or of satisfactory quality or continue to be available at acceptable prices. In particular, any replacement of our contract manufacturer could require significant effort and expertise because there may be a limited number of qualified replacements. Any delays in

obtaining adequate supplies of our product candidates that meet the necessary quality standards may delay our development or commercialization.

We may not succeed in our efforts to establish manufacturing relationships or other alternative arrangements for any of our product candidates or programs. Our product candidates may compete with other products and product candidates for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that are both capable of manufacturing and filling our viral product for us and willing to do so. If our existing third-party manufacturers, or the third parties that we engage in the future should cease to work with us, we likely would experience delays in obtaining sufficient quantities of our product candidates for us to meet commercial demand or to advance our clinical trials while we identify and qualify replacement suppliers. If for any reason we are unable to obtain adequate supplies of our product candidates or the therapeutic substances used to manufacture them, it will be more difficult for us to develop our product candidates and compete effectively. Further, even if we do establish such collaborations or arrangements, our third-party manufacturers may breach, terminate, or not renew these agreements.

Any problems or delays we experience in preparing for commercial-scale manufacturing of a product candidate or component may result in a delay in product development timelines and FDA or comparable foreign regulatory authority approval of the product candidate or may impair our ability to manufacture commercial quantities or such quantities at an acceptable cost and quality, which could result in the delay, prevention, or impairment of clinical development and commercialization of our product candidates and may materially harm our business, financial condition, results of operations, stock price and prospects.

We currently have only one contract manufacturer for our product candidates for use in our clinical trials. In addition, we do not have any long-term commitments from our suppliers of clinical trial material or guaranteed prices for our product candidates or their components. The manufacture of biopharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of therapeutics often encounter difficulties in production, particularly in scaling up initial production. These problems include difficulties with production costs and yields, quality control, including stability of the product candidate and quality assurance testing, shortages of qualified personnel or key raw materials, and compliance with strictly enforced federal, state, and foreign regulations. Our contract manufacturers may not perform as agreed. If our manufacturers were to encounter these or other difficulties, our ability to provide product candidates to patients in our clinical trials could be jeopardized.

Contract manufacturers of our product candidates may be unable to comply with our specifications, applicable cGMP requirements or other FDA, state or foreign regulatory requirements. Poor control of production processes can lead to the introduction of adventitious agents or other contaminants, or to inadvertent changes in the properties or stability of a product candidate that may not be detectable in final product testing. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure or maintain regulatory approval for their manufacturing facilities. Any such deviations may also require remedial measures that may be costly and/or time-consuming for us or a third party to implement and that may include the temporary or permanent suspension of a clinical trial or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business. Any delays in obtaining products or product candidates that comply with the applicable regulatory requirements may result in delays to clinical trials, product approvals, and commercialization. It may also require that we conduct additional studies.

While we are ultimately responsible for the manufacturing of our product candidates and therapeutic substances, other than through our contractual arrangements, we have little control over our manufacturers' compliance with these regulations and standards. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Any new manufacturers would need to either obtain or develop the necessary manufacturing know-how, and obtain the necessary equipment and materials, which may take substantial time and investment. We must also receive FDA approval for the use of any new manufacturers for commercial supply.

A failure to comply with the applicable regulatory requirements, including periodic regulatory inspections, may result in regulatory enforcement actions against our manufacturers or us (including fines and civil and criminal penalties, including imprisonment) suspension or restrictions of production, injunctions, delay or denial of product approval or supplements to approved products, clinical holds or termination of clinical trials, warning or untitled letters, regulatory authority communications warning the public about safety issues with the product candidate, refusal to permit the import or export of the products, product seizure, detention, or recall, operating restrictions, suits under the civil False Claims Act, corporate integrity agreements, consent decrees, withdrawal of product approval, environmental or safety incidents and other liabilities. If the safety of any quantities supplied is compromised due to our manufacturers' failure to adhere to applicable laws or for other reasons, we may not be able to obtain regulatory approval for or successfully commercialize our product candidates.

Any failure or refusal to supply our product candidates or components for our product candidates that we may develop could delay, prevent or impair our clinical development or commercialization efforts. Any change in our manufacturers could be costly because the commercial terms of any new arrangement could be less favorable and because the expenses relating to the transfer of necessary technology and processes could be significant.

If there are delays in completing our planned manufacturing facility, we may be delayed in scaling up manufacturing of our product candidates, may be forced to devote additional resources and management time to completing our manufacturing facility and may face delays in our product development timelines. Additionally, the transition of our manufacturing operations to our new facility may result in further delays or expenses, and we may not experience the anticipated operating efficiencies.

We have signed a lease for an approximately 63,000 square-foot facility in Framingham, Massachusetts at which we intend to establish and equip our own manufacturing facility in order to secure supplies for pivotal studies and commercial launch. This facility is intended to give us control over key aspects of the supply chain for our products and product candidates. We may face delays in the completion of the facility. In addition, we may not experience the anticipated operating efficiencies as we commence manufacturing operations at the new facility. Any such delays may disrupt or delay the supply of our product candidates if we have not maintained a sufficient back-up supply of our product candidates through third-party manufacturers. Moreover, changing manufacturing facilities may also require that we conduct additional studies, make notifications to the regulatory authorities, make additional filings to the regulatory authorities, and obtain regulatory authority approval for the new facilities, which may be delayed or which we may never receive. We will further need to comply with the FDA's and applicable foreign regulatory authorities' cGMP requirements for the production of our product candidates for clinical trials and, if approved, commercial supply, and will be subject to FDA and comparable foreign regulatory authority

inspection. These requirements include the qualification and validation of our manufacturing equipment and processes. We may not be able to develop or acquire the internal expertise and resources necessary for compliance with these requirements. Should we fail to comply with cGMP regulations, the opening of our manufacturing facility will be delayed. If we fail to achieve the operating efficiencies that we anticipate, our manufacturing and operating costs may be greater than expected, which could have a material adverse impact on our operating results.

In order to complete our planned manufacturing facility, we may be forced to devote greater resources and management time than anticipated, particularly in areas relating to operations, quality, regulatory, facilities and information technology. If we experience unanticipated employee turnover in any of these areas, we may not be able to effectively manage our ongoing manufacturing operations and we may not achieve the operating efficiencies that we anticipate from the new facility, which may negatively affect our product development timeline.

Any such problems could result in the delay, prevention, or impairment of clinical development and commercialization of our product candidates and may materially harm our business, financial condition, results of operations, stock price and prospects.

Risks related to legal and compliance matters

We face potential product liability exposure, and if successful claims are brought against us, we may incur substantial liability and have to limit the commercialization of any approved products and/or our product candidates.

The use of our product candidates in clinical trials, and the sale of any product for which we obtain regulatory approval, exposes us to the risk of product liability claims. We face inherent risk of product liability related to the testing of our product candidates in human clinical trials, including liability relating to the actions and negligence of our investigators, and will face an even greater risk if we commercially sell any product candidates that we may develop. For example, we may be sued if any product candidate we develop allegedly causes injury or is found to be otherwise unsuitable during clinical 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 or a breach of warranties. Claims could also be asserted under state consumer protection acts. Product liability claims might be brought against us by consumers, healthcare providers or others using, administering or selling our products. If we cannot successfully defend ourselves against these claims, we will incur substantial liabilities or be required to limit commercialization of our product candidates. Even successful defense would require significant financial and management resources. Regardless of merit or eventual outcome, liability claims may result in:

- loss of revenue from decreased demand for our products and/or product candidates;
- impairment of our business reputation or financial stability;
- costs of related litigation;
- substantial monetary awards to patients or other claimants;
- diversion of management attention;
- withdrawal of clinical trial participants and potential termination of clinical trial sites or entire clinical programs;

- the inability to commercialize our product candidates;
- significant negative media attention;
- decreases in our stock price;
- initiation of investigations and enforcement actions by regulators; and
- product recalls, withdrawals or labeling, marketing or promotional restrictions, including withdrawal of marketing approval.

We believe we have sufficient insurance coverage in place for our business operations. However, our insurance coverage may not reimburse us or may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. We intend to expand our insurance coverage to include the sale of commercial products if we obtain FDA or comparable foreign regulatory approval for our product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing, or at all. Failure to obtain and retain sufficient product liability insurance at an acceptable cost could prevent or inhibit the commercialization of products we develop. On occasion, large judgments have been awarded in class action lawsuits based on therapeutics that had unanticipated side effects. A successful product liability claim or series of claims brought against us could cause our stock price to fall and, if judgments exceed our insurance coverage, could decrease our cash, and materially harm our business, financial condition, results of operations, stock price and prospects.

We are subject to the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and other anti-corruption laws, as well as import and export control laws, customs laws, sanctions laws and other laws governing our operations. If we fail to comply with these laws, we could be subject to civil or criminal penalties, other remedial measures, and legal expenses, which could adversely affect our business, financial condition, results of operations, stock price and prospects.

Our operations are subject to anti-corruption laws, including the U.S. Foreign Corrupt Practices Act, or FCPA, the U.K. Bribery Act 2010, or the Bribery Act, and other anti-corruption laws that apply in countries where we do business. The FCPA, the Bribery Act, and these other laws generally prohibit us and our employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. We also may participate in collaborations and relationships with third parties whose actions, if non-compliant, could potentially subject us to liability under the FCPA, Bribery Act or local anti-corruption laws. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted.

We are also subject to other laws and regulations governing our international operations, including regulations administered by the governments of the United States and the United Kingdom and authorities in the European Union, including applicable import and export control regulations, economic sanctions on countries and persons, anti-money laundering laws, customs requirements and currency exchange regulations, collectively referred to as the trade control laws.

We can provide no assurance that we will be completely effective in ensuring our compliance with all applicable anti-corruption laws or other legal requirements, including trade control laws. If we are not in compliance with applicable anti-corruption laws or trade control laws, we may be subject to criminal and

civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses, which could have an adverse impact on our business, financial condition, results of operations, stock price and prospects. Likewise, any investigation of any potential violations of these anti-corruption laws or trade control laws by U.S., U.K. or other authorities could also have an adverse impact on our reputation, our business, financial condition, results of operations, stock price and prospects.

If we fail to comply with federal and state healthcare laws, including fraud and abuse and health and other information privacy and security laws, we could face substantial penalties and our business, financial condition, results of operations, stock price and prospects will be materially harmed.

We are subject to many federal and state healthcare laws, including those described in "Business—Regulatory matters," such as the federal Anti-Kickback Statute, the federal civil and criminal False Claims Acts, the civil monetary penalties statute, the Medicaid Drug Rebate statute and other price reporting requirements, the Veterans Health Care Act of 1992, or VHCA, the federal Health Insurance Portability and Accountability Act of 1996 (as amended by the Health Information Technology for Economics and Clinical Health Act, or HITECH), or HIPAA, the FCPA, the ACA, and similar state laws. Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws, and regulations pertaining to fraud and abuse, reimbursement programs, government procurement, and patients' rights are and will be applicable to our business. We would be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states and foreign jurisdictions in which we conduct our business. In the European Union, the data privacy laws are generally stricter than those which apply in the United States and include specific requirements for the collection of personal data of European Union persons or the transfer of personal data outside of the European Union to the United States to ensure that European Union standards of data privacy will be applied to such data.

If we or our operations are found to be in violation of any federal or state healthcare law, or any other governmental laws or regulations that apply to us, we may be subject to penalties, including civil, criminal, and administrative penalties, damages, fines, disgorgement, suspension and debarment from government contracts, and refusal of orders under existing government contracts, exclusion from participation in U.S. federal or state health care programs, corporate integrity agreements, and the curtailment or restructuring of our operations, any of which could materially adversely affect our ability to operate our business and our financial results. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, it may be subject to criminal, civil or administrative sanctions, including but not limited to, exclusions from participation in government healthcare programs, which could also materially affect our business.

Although an effective compliance program can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Moreover, achieving and sustaining compliance with applicable federal, state and foreign privacy, data protection, security, reimbursement, and fraud laws may prove costly. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business.

If the government or third-party payors fail to provide adequate coverage, reimbursement and payment rates for our product candidates, or if health maintenance organizations or long-term care facilities choose to use therapies that are less expensive or considered a better value, our revenue and prospects for profitability will be limited.

In both domestic and foreign markets, sales of our products will depend in part upon the availability of coverage and reimbursement from third-party payors. Such third-party payors include government health programs such as Medicare and Medicaid, managed care providers, private health insurers, and other organizations. Coverage decisions may depend upon clinical and economic standards that disfavor new therapeutic products when more established or lower cost therapeutic alternatives are already available or subsequently become available, even if our products are alone in a class. If reimbursement is not available, or is available only to limited levels, our product candidates may be competitively disadvantaged, and we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain a market share sufficient to realize a sufficient return on our or their investments. Alternatively, securing favorable reimbursement terms may require us to compromise pricing and prevent us from realizing an adequate margin over cost.

There is significant uncertainty related to third-party payor coverage and reimbursement of newly approved therapeutics. Marketing approvals, pricing, and reimbursement for new therapeutic products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a therapeutic before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription biopharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay commercial launch of the product, possibly for lengthy time periods, which may negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our or their investment in one or more product candidates, even if our product candidates obtain marketing approval. Our ability to commercialize our product candidates will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Regulatory authorities and third-party payors, such as private health insurers, and health maintenance organizations, decide which medications they will cover and establish reimbursement levels. The healthcare industry is acutely focused on cost containment, both in the United States and elsewhere. Several third-party payors are requiring that companies provide them with predetermined discounts from list prices, are using preferred drug lists to leverage greater discounts in competitive classes, are disregarding therapeutic differentiators within classes, are challenging the prices charged for therapeutics, and are negotiating price concessions based on performance goals.

Third-party payors, whether foreign or domestic, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In addition, in the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. Further, we believe that future coverage and reimbursement will likely be subject to increased restrictions both in the United States and in international markets. Third-party coverage and reimbursement for our products or product candidates for which we receive regulatory approval may not be available or adequate in either the United

States or international markets, which could have a negative effect on our business, financial condition, results of operations, stock price and prospects.

Assuming coverage is approved, the resulting reimbursement payment rates might not be adequate. If payors subject our product candidates to maximum payment amounts, or impose limitations that make it difficult to obtain reimbursement, providers may choose to use therapies which are less expensive when compared to our product candidates. Additionally, if payors require high copayments, beneficiaries may seek alternative therapies. We may need to conduct post-marketing studies in order to demonstrate the cost-effectiveness of any products to the satisfaction of hospitals, other target customers and their third-party payors. Such studies might require us to commit a significant amount of management time and financial and other resources. Our products might not ultimately be considered cost-effective. Adequate third-party coverage and reimbursement might not be available to enable us to maintain price levels sufficient to realize an appropriate return on investment in product development.

In addition, federal programs impose penalties on manufacturers of therapeutics in the form of mandatory additional rebates and/or discounts if commercial prices increase at a rate greater than the Consumer Price Index-Urban, and these rebates and/or discounts, which can be substantial, may impact our ability to raise commercial prices. A few states have also passed or are considering legislation intended to prevent significant price increases. Regulatory authorities and 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. These payors may not view our products, if any, as cost-effective, and coverage and reimbursement may not be available to our customers, or may not be sufficient to allow our products, if any, to be marketed on a competitive basis. Cost-control initiatives could cause us to decrease, discount, or rebate a portion of the price we, or they, might establish for products, which could result in lower than anticipated product revenues. If the realized prices for our products, if any, decrease or if governmental and other third-party payors do not provide adequate coverage or reimbursement, our prospects for revenue and profitability will suffer.

There may also be delays in obtaining coverage and reimbursement for newly approved therapeutics, and coverage may be more limited than the indications for which the product is approved by the FDA or comparable foreign regulatory authorities. Such delays have made it increasingly common for manufacturers to provide newly approved drugs to patients experiencing coverage delays or disruption at no cost for a limited period in order to ensure that patients are able to access the drug. Moreover, eligibility for reimbursement does not imply that any therapeutic will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new therapeutics, if applicable, may also not be sufficient to cover our costs and may only be temporary. Reimbursement rates may vary, by way of example, according to the use of the product and the clinical setting in which it is used. Reimbursement rates may also be based on reimbursement levels already set for lower cost products or may be incorporated into existing payments for other services.

In addition, third-party payors are increasingly requiring higher levels of evidence of the benefits and clinical outcomes of new technologies, benchmarking against other therapies, seeking performance-based discounts, and challenging the prices charged. We cannot be sure that coverage will be available for any product candidate that we commercialize and, if available, that the reimbursement rates will be adequate. An inability to promptly obtain coverage and adequate payment rates from both government-funded and private payors for any of our product candidates for which we obtain marketing approval could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

We are subject to new legislation, regulatory proposals and healthcare payor initiatives that may increase our costs of compliance, and adversely affect our ability to market our products, obtain collaborators, and raise capital.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any products for which we obtain marketing approval. We expect that current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we may receive for any approved products.

For example, legislative changes have been proposed and adopted since the ACA was enacted in 2010. These changes include, among other things, aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went effective on April 1, 2013. In addition, the American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. The Centers for Medicare and Medicaid Services, or CMS, promulgated regulations governing manufacturers' obligations and reimbursement under the Medicaid Drug Rebate Program, and recently promulgated a regulation that limited Medicare Part B payment to certain hospitals for outpatient drugs purchased under the 340B program. The current Administration's budget request for fiscal year 2018 also seeks among other health care reforms legislation that would give states more tools to control their Medicaid costs. Changes imposed by recent legislative actions are further described in "Business—Regulatory matters." These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on customers for our products, if approved, and, accordingly, on our results of operations.

We expect that the ACA, as well as other federal and state healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria, increased regulatory burdens and operating costs, decreased net revenue from our biopharmaceutical products, decreased potential returns from our development efforts, and additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government healthcare programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from commercializing our products and being able to generate revenue, and we could be prevented from or significantly delayed in achieving profitability.

In addition, there have been a number of other legislative and regulatory proposals aimed at changing the biopharmaceutical industry. For instance, the Drug Quality and Security Act imposes obligations on manufacturers of biopharmaceutical products related to product tracking and tracing. Among the requirements of this legislation, manufacturers are required to provide certain information regarding the product to individuals and entities to which product ownership is transferred, will be required to label products with a product identifier, and are required keep certain records regarding the product. The transfer of information to subsequent product owners by manufacturers is also required to be done electronically. Manufacturers are also being required to verify that purchasers of the manufacturers' products are appropriately licensed. Further, manufactures have product investigation, quarantine, disposition, and FDA, other comparable foreign regulatory authorities, and trading partner notification responsibilities related to counterfeit, diverted, stolen, and intentionally adulterated products that would result in serious adverse health consequences of death to humans, as well as products that are the subject

of fraudulent transactions or which are otherwise unfit for distribution such that they would be reasonably likely to result in serious health consequences or death.

Compliance with the federal track and trace requirements may increase our operational expenses and impose significant administrative burdens. As a result of these and other new proposals, we may determine to change our current manner of operation, provide additional benefits or change our contract arrangements, any of which could have a material adverse effect on our business, financial condition, results of operations, stock price and prospects.

Our employees, independent contractors, consultants, commercial partners, principal investigators, CMOs, or CROs may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading, which could have a material adverse effect on our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees, independent contractors, consultants, commercial partners, principal investigators, contract manufacturing organizations, or CMOs, or CROs could include intentional, reckless, negligent, or unintentional failures to comply with FDA regulations, comply with applicable fraud and abuse laws, provide accurate information to the FDA, properly calculate pricing information required by federal programs, report financial information or data accurately or disclose unauthorized activities to us. This misconduct could also involve the improper use or misrepresentation of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter this type of 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. Moreover, it is possible for a whistleblower to pursue a False Claims Act case against us even if the government considers the claim unmeritorious and declines to intervene, which could require us to incur costs defending against such a claim. 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, financial condition, results of operations, stock price and prospects, including the imposition of significant fines or other sanctions.

Violations of or liabilities under environmental, health and safety laws and regulations could subject us to fines, penalties or other costs that could have a material adverse effect on the success of our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures, the handling, use, storage, treatment and disposal of hazardous materials and wastes and the cleanup of contaminated sites. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our operations also produce hazardous waste products. We would incur substantial costs as a result of violations of or liabilities under environmental requirements in connection with our operations or property, including fines, penalties and other sanctions, investigation and cleanup costs and third-party claims. Although we generally contract with third parties for the disposal of hazardous materials and wastes from our operations, we cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

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

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 our implementation of security measures, our internal computer systems, and those of our CROs, CMOs, IT suppliers and other contractors and consultants are vulnerable to damage from computer viruses, cyber attacks and other unauthorized access, natural disasters, terrorism, war, and telecommunication and electrical failures. If such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our product candidate development programs. For example, the loss of clinical trial data from completed, ongoing or planned clinical trials 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 were to result in a loss of or damage to our data or applications, or inappropriate disclosure of personal, confidential or proprietary information, we could incur liability and the further development of any of our product candidates could be delayed.

Risks related to our operations

We will need to expand the size of our organization, and we may experience difficulties in managing this growth, which could disrupt our operations.

As of July 9, 2018, we had 44 full-time employees, including 28 employees engaged in research and development. As our development and commercialization plans and strategies develop, and as we transition into operating as a public company, we expect to need additional managerial, operational, sales, marketing, financial and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing our internal development efforts effectively, including the clinical, FDA and comparable foreign regulatory review process for our product candidates, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to commercialize RP1 and our other product candidates will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

We currently rely, and for the foreseeable future will continue to rely, in substantial part on certain independent organizations, advisors and consultants to provide certain services. The services include substantially all aspects of clinical trial management and manufacturing, as well as support for our finance and accounting functions. We cannot assure you that the services of independent organizations, advisors and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. In addition, if we are unable to effectively manage our outsourced activities or if

the quality or accuracy of the services provided by consultants is compromised for any reason, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain marketing approval of RP1 and our other product candidates or otherwise advance our business. We cannot assure you that we will be able to manage our existing consultants or find other competent outside contractors and consultants on economically reasonable terms, or at all.

If we are not able to effectively expand our organization by hiring qualified new employees and expanding our groups of consultants and contractors, we may not be able to successfully implement the tasks necessary to further develop and commercialize RP1 and our other product candidates and, accordingly, may not achieve our research, development and commercialization goals.

We are highly dependent on our key personnel, including our founders, Robert Coffin, Ph.D., our President and Chief Executive Officer, Philip Astley-Sparke, our Executive Chairman, Howard Kaufman, M.D., our Chief Medical Officer, and Colin Love, Ph.D., our Chief Operating Officer. If we are not successful in attracting, motivating and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract, motivate and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our management and particularly on the services of our founders, as well as our other scientific, manufacturing, quality and medical personnel. Robert Coffin, Ph.D., our President and Chief Executive Officer, Philip Astley-Sparke, our Executive Chairman, and Colin Love, Ph.D., our Chief Operating Officer, were the founder and senior management team of BioVex, where they invented and developed T-Vec, the only oncolytic immunotherapy to receive FDA approval. BioVex was acquired by Amgen Inc., or Amgen, in 2011. Our Chief Medical Officer, Howard Kaufman, M.D., was the principal investigator for the pivotal study upon which T-Vec was approved and previously served as President of the Society for the Immunotherapy of Cancer. We believe that their drug discovery and development experience, and overall biopharmaceutical company management experience, would be difficult to replace. The loss of the services of our key personnel and any of our other executive officers, key employees, and scientific and medical advisors, and our inability to find suitable replacements, could result in delays in product development and harm our business. Furthermore, the historical results, past performance and/or acquisitions of companies with which our founders were affiliated, including BioVex, do not necessarily predict or guarantee similar results for our company.

We conduct our operations at our facilities near Boston, Massachusetts and near Oxford, England, each of which are in regions that are home 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 expect that we will need to recruit talent from outside of these regions, and doing so may be costly and difficult.

To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have provided stock option grants that vest over time. The value to employees of these equity grants that vest over time may be significantly affected by movements in our stock price that are beyond our control, and may at any time be insufficient to counteract more lucrative offers from other companies. Although we have employment agreements with our key employees, these employment agreements generally provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. We do not maintain "key man" insurance policies on the lives of all of these individuals or the lives of any of our other employees.

We have identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect our business.

In connection with the audits of our consolidated financial statements as of and for the years ended March 31, 2017 and 2018, we identified material weaknesses in our internal control over financial reporting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, our stock price and ability to access the capital markets in the future.

The material weaknesses we identified were as follows:

- We did not design or maintain an effective control environment commensurate with our financial reporting requirements. We lacked a sufficient number of professionals with an appropriate level of accounting knowledge, training and experience to appropriately analyze, record and disclose accounting matters timely and accurately. Additionally, the limited personnel resulted in our inability to consistently establish appropriate authorities and responsibilities in pursuit of our financial reporting objectives, as demonstrated by, among other things, our insufficient segregation of duties in our accounting function. This material weakness further contributed to the material weakness below.

- We did not design and maintain formal accounting policies, processes and controls to analyze, account for and disclose complex transactions, including accounting for preferred stock, stock-based compensation, warrant liabilities and leases.

Each of these control deficiencies could result in a misstatement of our accounts or disclosures that would result in a material misstatement of our annual or interim consolidated financial statements that would not be prevented or detected, and accordingly, we determined that these control deficiencies constitute material weaknesses.

These material weaknesses also resulted in adjustments to preferred stock, stock compensation expense, warrant liability and deferred rent in our consolidated financial statements as of and for the year ended March 31, 2017, which were recorded prior to their issuance.

Prior to the completion of this offering, we have been a private company with limited accounting personnel to adequately execute our accounting processes and other supervisory resources with which to address our internal control over financial reporting. We are in the process of implementing measures designed to improve our internal control over financial reporting and remediate the control deficiencies that led to these material weaknesses, including hiring additional finance and accounting personnel and initiating design and implementation of our financial control environment, including the establishment of controls to account for and disclose complex transactions.

We cannot assure you that the measures we have taken to date, and actions we may take in the future, will be sufficient to remediate the control deficiencies that led to these material weaknesses in our internal control over financial reporting or that they will prevent or avoid potential future material weaknesses. In addition, neither our management nor an independent registered public accounting firm has performed an

evaluation of our internal control over financial reporting in accordance with the provisions of the Sarbanes-Oxley Act because no such evaluation has been required. Had we or our independent registered public accounting firm performed an evaluation of our internal control over financial reporting in accordance with the provisions of the Sarbanes-Oxley Act, additional material weaknesses may have been identified. If we are unable to successfully remediate our existing or any future material weaknesses in our internal control over financial reporting, or identify any additional material weaknesses, the accuracy and timing of our financial reporting may be adversely affected, potentially resulting in restatements of our financial statements, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports and applicable Nasdaq listing requirements, investors may lose confidence in our financial reporting, and our share price may decline as a result.

If we fail to maintain proper and effective internal controls over financial reporting our ability to produce accurate and timely financial statements could be impaired.

We are required to maintain internal controls over financial reporting. Commencing with our fiscal year ending the year after this offering is completed, we must perform system and process design evaluation and testing of the effectiveness of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting in our Form 10-K filing for that year, as required by Section 404 of the Sarbanes-Oxley Act. This will require that we incur substantial additional professional fees and internal costs to expand our accounting and finance functions and that we expend significant management efforts. Prior to this offering, we have never been required to test our internal controls within a specified period and, as a result, we may experience difficulty in meeting these reporting requirements in a timely manner. In addition, in connection with the audits of our consolidated financial statements as of and for the years ended March 31, 2017 and 2018, we identified material weaknesses in our internal control over financial reporting. See "Risk factors—We have identified material weaknesses in our internal control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect our business."

If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, if our independent registered public accounting firm determines that we continue to have a material weakness or significant deficiency in our internal control over financial reporting, or if we are unable to maintain proper and effective internal controls over financial reporting, we may not be able to produce timely and accurate financial statements. If that were to happen, our investors could lose confidence in our reported financial information, the market price of our stock could decline and we could be subject to sanctions or investigations by the SEC, Nasdaq or other regulatory authorities.

We believe that any internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. We may discover weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our consolidated financial statements. Our internal control over financial reporting will not prevent or detect all errors and all fraud. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make a required

related party transaction disclosure. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

Upon the completion of this offering, we will become subject to the periodic reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We must design our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make a required related party transaction disclosure. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

If we engage in future acquisitions or strategic partnerships, this may increase our capital requirements, dilute our stockholders, cause us to incur debt or assume contingent liabilities, and subject us to other risks.

We may evaluate various acquisitions and strategic partnerships, including licensing or acquiring complementary products, intellectual property rights, technologies, or businesses. Any potential acquisition or strategic partnership may entail numerous risks, including:

- increased operating expenses and cash requirements;
- the assumption of additional indebtedness or contingent liabilities;
- the issuance of our equity securities;
- assimilation of operations, intellectual property and products of an acquired company, including difficulties associated with integrating new personnel;
- the diversion of our management's attention from our existing product programs and initiatives in pursuing such a strategic merger or acquisition;
- retention of key employees, the loss of key personnel, and uncertainties in our ability to maintain key business relationships;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party, their regulatory compliance status, and their existing products or product candidates and marketing approvals; and
- our inability to generate revenue from acquired technology and/or products sufficient to meet our objectives in undertaking the acquisition or even to offset the associated acquisition and maintenance costs.

In addition, if we undertake acquisitions, we may issue dilutive securities, assume or incur debt obligations, incur large one-time expenses and acquire intangible assets that could result in significant future amortization expense. Moreover, we may not be able to locate suitable acquisition opportunities and this inability could impair our ability to grow or obtain access to technology or products that may be important to the development of our business. Any of the foregoing may materially harm our business, financial condition, results of operations, stock price and prospects.

Unfavorable market and economic conditions may have serious adverse consequences on our business, financial condition, results of operations, stock price and prospects.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. The most recent global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including a reduced 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.

At March 31, 2018, we had $61.6 million of cash and cash equivalents and short-term investments. Although we are not aware of any downgrades, material losses, or other significant deterioration in the fair value of our cash equivalents or short-term investments since that date, we cannot assure you that deterioration of the global credit and financial markets would not negatively impact our current portfolio of cash equivalents or short-term investments, or our ability to meet our financing objectives. Furthermore, our stock price may decline due, in part, to the volatility of the stock market and general economic downturns.

Exchange rate fluctuations may materially affect our results of operations and financial conditions.

Owing to the international scope of our operations, fluctuations in exchange rates, particularly between the U.S. dollar and the British pound and the euro, may adversely affect us. Although we are based in the United States, we have significant research and development operations in the United Kingdom, and source third-party manufacturing, consulting and other services in the United Kingdom and the European Union. As a result, our business and the price of our common stock may be affected by fluctuations in foreign exchange rates, which may have a significant impact on our results of operations and cash flows from period to period. Currently, we do not have any exchange rate hedging arrangements in place.

Risks related to our common stock and this offering

An active trading market for our common stock may not develop, and you may not be able to resell your shares at or above the initial public offering price.

Prior to this offering, there has been no public market for shares of our common stock. Although our common stock has been approved for listing on Nasdaq, an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price of our common stock was determined through negotiations between us and the underwriters. This initial public offering price may not be indicative of the market price of our common stock after this offering. In the absence of an active trading market for our common stock, investors may not be able to sell their common stock at or above the initial public offering price or at the time that they would like to sell.

The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock in this offering.

Our stock price is likely to be volatile. The stock market in general and the market for biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the initial public offering price. The market price for our common stock may be influenced by many factors, including:

- the success of competitive products or technologies;
- results of clinical trials of RP1 and our other product candidates or those of our competitors;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to the development of RP1 and our other product candidates or clinical development programs;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or drugs;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and
- the other factors described in this "Risk factors" section.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or our guidance.

Our quarterly and annual operating results may fluctuate significantly in the future, which makes it difficult for us to predict our future operating results. From time to time, we may enter into license or collaboration agreements with other companies that include development funding and significant upfront and milestone payments and/or royalties, which may become an important source of our revenue. Accordingly, our revenue may depend on development funding and the achievement of development and clinical milestones under current and any potential future license and collaboration agreements and sales of our products, if approved. These upfront and milestone payments may vary significantly from period to period and any such variance could cause a significant fluctuation in our operating results from one period to the next.

In addition, we measure compensation cost for stock-based awards made to employees at the grant date of the award, based on the fair value of the award as determined by our board of directors, and recognize the cost as an expense over the employee's requisite service period. As the variables that we use as a basis for valuing these awards change over time, including, after the completion of this offering, our

underlying stock price and stock price volatility, the magnitude of the expense that we must recognize may vary significantly.

Furthermore, our operating results may fluctuate due to a variety of other factors, many of which are outside of our control and may be difficult to predict, including the following:

- the timing and cost of, and level of investment in, research and development activities relating to our current and any future product candidates, which will change from time to time;
- the total expenses we incur in connection with establishing, equipping, and operating our planned manufacturing facility and the actual timing of the facility becoming operational;
- our ability to enroll patients in clinical trials and the timing of enrollment;
- the cost of manufacturing our current and any future product candidates, which may vary depending on the FDA's and comparable foreign regulatory authorities' guidelines and requirements, the quantity of production and the terms of any agreements with manufacturers;
- expenditures that we will or may incur to acquire or develop additional product candidates and technologies;
- the timing and outcomes of clinical and preclinical studies for RP1 and our other product candidates or competing product candidates;
- competition from existing and potential future products that compete with RP1 and our other product candidates, and changes in the competitive landscape of our industry, including consolidation among our competitors or partners;
- any delays in regulatory review or approval of RP1 or our other product candidates;
- the level of demand for RP1 and our other product candidates, if approved, which may fluctuate significantly and be difficult to predict;
- the risk/benefit profile, cost and reimbursement policies with respect to our product candidates, if approved, and existing and potential future products that compete with RP1 and our other product candidates;
- our ability to commercialize RP1 and our other product candidates, if approved, inside and outside of the United States, either independently or working with third parties;
- the success of and our ability to establish and maintain collaborations, licensing or other arrangements;
- our ability to adequately support future growth;
- potential unforeseen business disruptions that increase our costs or expenses;
- future accounting pronouncements or changes in our accounting policies; and
- the changing and volatile global economic environment.

These factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the

expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated revenue and/or earnings guidance we may provide.

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

We will have considerable discretion in the application of the net proceeds of this offering. We intend to use the net proceeds from this offering to fund our preclinical and clinical development programs and the establishment and equipping of our planned manufacturing facility, and the remainder for general corporate purposes, including working capital requirements and operating expenses. See "Use of proceeds." As a result, investors will be relying upon management's judgment with only limited information about our specific intentions for the use of the balance of the net proceeds of this offering. We may use the net proceeds for purposes that do not yield a significant return or any return at all for our stockholders. In addition, pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.

You should not rely on an investment in our common stock to provide dividend income. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation of their stock, which may never occur, as the only way to realize any return on their investment.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

You will suffer immediate and substantial dilution in the pro forma as adjusted net tangible book value of the common stock you purchase in this offering. At the initial public offering price of $15.00 per share, purchasers of common stock in this offering will experience immediate dilution of $10.11 per share in pro forma as adjusted net tangible book value of the common stock. In addition, investors purchasing common stock in this offering will contribute 53.6% of the total amount invested by stockholders since inception but will only own 21.7% of the shares of common stock outstanding. In the past, we have issued options and other securities to acquire common stock at prices significantly below the initial public offering price. To the extent these outstanding securities are ultimately exercised, investors purchasing common stock in this offering will sustain further dilution. See "Dilution" for a more detailed description of the dilution to new investors in the offering.

Our executive officers, directors, and stockholders and their affiliates who beneficially own more than 5% of our common stock will continue to exercise significant influence over our company after this offering, which will limit your ability to influence corporate matters and could delay or prevent a change in corporate control.

Immediately following the completion of this offering, the existing holdings of our executive officers, directors, and stockholders and their affiliates who beneficially own more than 5% of our common stock will represent beneficial ownership, in the aggregate, of approximately 84.3% of our outstanding common stock, assuming no exercise of the underwriters' option to acquire additional common stock in this offering. As a result, these stockholders, if they act together, will be able to influence our management and

affairs and the outcome of matters submitted to our stockholders for approval, including the election of directors and any sale, merger, consolidation, or sale of all or substantially all of our assets. These stockholders acquired their shares of common stock for substantially less than the price of the shares of common stock being acquired in this offering, and these stockholders may have interests with respect to their common stock that are different from those of investors in this offering, and the concentration of voting power among these stockholders may have an adverse effect on the price of our common stock. In addition, this concentration of ownership might adversely affect the market price of our common stock by:

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

See "Principal stockholders" in this prospectus for more information regarding the ownership of our outstanding common stock by our executive officers, directors, principal stockholders and their respective affiliates.

Conflicts of interest may arise because some members of our board of directors are representatives of our principal stockholders.

Certain of our principal stockholders or their affiliates are venture capital funds or other investment vehicles that could invest in entities that directly or indirectly compete with us. As a result of these relationships, when conflicts arise between the interests of the principal stockholders or their affiliates and the interests of other stockholders, members of our board of directors that are representatives of the principal stockholders may not be disinterested. Neither the principal stockholders nor the representatives of the principal stockholders on our board of directors, by the terms of our amended and restated certificate of incorporation, are required to offer us any transaction opportunity of which they become aware and could take any such opportunity for themselves or offer it their other affiliates, unless such opportunity is expressly offered to them solely in their capacity as members of our board of directors.

Sales of a substantial number of shares of our common stock in the public market could cause our stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the market price of our common stock could decline. Based upon the number of shares of common stock, on an as-converted basis, outstanding as of July 9, 2018, upon the completion of this offering, we will have outstanding a total of 30,838,587 shares of common stock, assuming no exercise of the underwriters' option to purchase an additional 1,005,000 shares. Of these shares, as of the date of this prospectus, approximately 6,700,000 shares, or 22% of our common stock, plus any shares sold upon exercise of the underwriters' option to purchase additional shares, will be freely tradable by persons other than our "affiliates", without restriction, in the public market immediately following this offering. Under the Securities Act, an "affiliate" of an issuer is a person who directly or indirectly controls, is controlled by or is under common control with that issuer.

The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus. After the lock-up agreements expire, based upon the number of shares of common stock, on an as-converted basis, outstanding as of July 9, 2018, up to an additional approximately 24.1 million shares of common stock will be eligible for sale in the public market, approximately 21% of which shares are held by directors, executive officers and other affiliates and will be subject to certain limitations of Rule 144 under

the Securities Act. See "Shares eligible for future sale" for more information. J.P. Morgan Securities LLC and Leerink Partners LLC, however, may, in their sole discretion, permit our officers, directors and other stockholders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements.

Several of our existing stockholders (or their affiliates), including stockholders affiliated with certain of our independent directors, and one of our independent directors, have agreed to purchase an aggregate of approximately 3.3 million in shares of our common stock in this offering at the initial public offering price. The underwriters will receive the same underwriting discount on any shares purchased by these investors as they will on any other shares sold to the public in this offering. The shares purchased by such investors in this offering will reduce the available public float of our common shares. As a result, the purchase of common shares by such investors in this offering may reduce the liquidity of our common shares relative to what it would have been had these shares been purchased by other investors or not subject to lock-up agreements.

Upon completion of this offering, approximately 6.8 million shares of common stock that are either subject to outstanding options, reserved for future issuance under our equity incentive plans or subject to outstanding warrants will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

After the completion of this offering, the holders of approximately 19.7 million shares of our common stock, or their permitted transferees, will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described above. See "Certain relationships and related party transactions—Stockholder agreements—Investors' rights agreement." Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market price of our common stock.

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

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. We will be subject to the reporting requirements of the Exchange Act, which will require, among other things, that we file with the SEC annual, quarterly and current reports with respect to our business and financial condition. In addition, the Sarbanes-Oxley Act, and related SEC and Nasdaq rules impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, was enacted. There are significant corporate governance and executive compensation-related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas such as "say on pay" and proxy access. Recent legislation permits emerging growth companies to implement many of these requirements over a longer period and up to five years from the pricing of this offering. We intend to take advantage of this new legislation, but cannot guarantee that we will not be required to implement these requirements sooner than budgeted or planned and thereby incur unexpected expenses. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations,

which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time-consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition, results of operations, stock price and prospects. The increased costs will decrease our net income or increase our net loss, and may require us to reduce costs in other areas of our business. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

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

The trading market for our common stock will rely, in part, on the research and reports that industry or financial analysts publish about us or our business. We may never obtain research coverage by industry or financial analysts. If no or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which, in turn, could cause our stock price to decline.

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

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

We are an emerging growth company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an emerging growth company. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and

exemptions from the requirements of holding nonbinding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could be an emerging growth company for up to five years following the year in which we complete this offering, although circumstances could cause us to lose that status earlier. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenue of at least $1.07 billion or (c) in which we are deemed to be a large accelerated filer, which requires the market value of our common stock that is held by non-affiliates to exceed $700.0 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

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 this prospectus and 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.

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. As a result, changes in rules of U.S. generally accepted accounting principles or their interpretation, the adoption of new guidance or the application of existing guidance to changes in our business could significantly affect our financial position and results of operations.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and 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 the Court of Chancery of the State of Delaware is the exclusive forum for:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty;
- any action asserting a claim against us arising under the DGCL, our amended and restated certificate of incorporation, or our amended and restated bylaws; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine.

Our amended and restated certificate of incorporation further provides that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

These exclusive-forum provisions 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 lawsuits against us and our directors, officers, and other employees. If a court were to find either exclusive-forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business.

Special note regarding forward-looking statements

This prospectus contains forward-looking statements concerning our business, operations and financial performance and condition, as well as our plans, objectives and expectations for our business operations and financial performance and condition. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. In some cases, you can identify these forward-looking statements by the use of words such as "outlook," "believes," "expects," "potential," "continues," "may," "will," "should," "seeks," "approximately," "predicts," "intends," "plans," "estimates," "anticipates" or the negative version of these words or other comparable words. Such forward-looking statements are subject to various risks and uncertainties. Accordingly, there are or will be important factors that could cause actual outcomes or results to differ materially from those indicated in these statements. We believe these factors include, among other things:

- the timing, progress, and results of preclinical studies and clinical trials for RP1 or any of our other product candidates, including the timing of initiation and completion of studies or trials and related preparatory work and the period during which the results of the trials will become available;
- the timing, scope or likelihood of regulatory filings and approvals, including timing of our BLA filing for, and final FDA approval of, RP1 or any of our other product candidates;
- the timing, scope, or likelihood of foreign regulatory filings and approvals;
- our ability to develop our product candidates for use in combination with other checkpoint blockade therapies, including anti-PD-1;
- our ability to develop and advance any future product candidates into, and successfully complete, clinical trials;
- our expectations regarding the size of the patient populations for RP1 or our other product candidates if approved for commercial use;
- the costs and timing of establishing, equipping, and operating our planned in-house manufacturing facility;
- the implementation of our business model and our strategic plans for our business, RP1 and our other product candidates;
- the rate and degree of market acceptance and clinical utility of RP1 or our other product candidates;
- the potential benefits of and our ability to establish or maintain future collaborations or strategic relationships;
- our ability to obtain additional funding as necessary;
- our ability to retain the continued service of our key professionals and to identify, hire and retain additional qualified professionals;
- our intellectual property position, including the scope of protection we are able to establish and maintain for intellectual property rights covering RP1 and our other product candidates, claims others may make regarding rights in our intellectual property, and any potential infringement, misappropriation or other violation of any third-party intellectual property rights;

- our ability to remediate our existing material weaknesses and to design and maintain an effective system of internal controls;
- our competitive position, and developments and projections relating to our competitors and our industry;
- negative developments in the field of immuno-oncology;
- our expectations related to the use of proceeds from this offering;
- our estimates regarding expenses and capital requirements;
- the impact of laws and regulations;
- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act; and
- the other risks and uncertainties described under "Risk factors."

The forward-looking statements made in this prospectus relate only to events as of the date on which the statements are made. These factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements that are included in this prospectus. Moreover, we operate in a competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this prospectus. We undertake no obligation to publicly update or review any forward-looking statement, whether as a result of new information, future developments or otherwise, except to the extent required by applicable law. You should not rely on forward-looking statements as predictions of future events. 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.

Market data

This prospectus includes market and industry data and forecasts concerning our business and the markets for certain cancers, including data regarding the estimated size of those markets and the incidence and prevalence of certain medical conditions, that we have derived from independent consultant reports, publicly available information, various industry, medical and general publications, other published industry sources, government data and our internal data and estimates. Independent consultant reports, industry publications and other published industry sources generally indicate that the information contained therein was obtained from sources believed to be reliable.

Our internal data and estimates are based upon information obtained from trade and business organizations and other contacts in the markets in which we operate and our management's understanding of industry conditions.

Use of proceeds

The net proceeds from the sale of 6,700,000 shares of common stock in this offering will be approximately $90.8 million, or approximately $104.8 million if the underwriters exercise their option to purchase additional shares in full, at the initial public offering price of $15.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We currently expect to use the net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, as follows:

- approximately $20.0 million to fund the development of RP1 through the completion of the ongoing Phase 1/2 clinical trial in four solid tumor types;
- approximately $15.0 million to fund our share of the costs to fully recruit our planned Phase 2 clinical trial with RP1 in CSCC;
- approximately $20.0 million to fund the completion of the preclinical development and the initial clinical trials of RP2 in approximately 100 patients;
- approximately $10.0 million to fund the completion of preclinical development and a Phase 1 clinical trial of RP3;
- approximately $20.0 million to fund capital expenditures associated with establishing and equipping our planned manufacturing facility in Framingham, Massachusetts; and
- the remainder for general corporate purposes, including working capital requirements and operating expenses.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds from this offering or the amounts that we will actually spend on the uses set forth above. The amount and timing of our actual expenditures depend on several factors, including the progress and results of our research and development efforts, the amount of cash used by our operations, and the other factors described under "Risk factors." Accordingly, we will retain broad discretion in the allocation of the net proceeds from this offering. However, based on our current plans, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, will enable us to fund our operating expenses and capital expenditure requirements into the second half of 2021. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See "Management's discussion and analysis of financial condition and results of operations—Liquidity and capital resources." Pending application of the net proceeds, we intend to invest the net proceeds from this offering in short- and intermediate-term, interest-bearing obligations, investment-grade instruments, certificates of deposit or direct or guaranteed obligations of the U.S. government.

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 for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, contractual restrictions, business prospects, general business conditions and other factors that our board of directors may deem relevant.

Capitalization

The following table sets forth our cash and cash equivalents and short-term investments and capitalization as of March 31, 2018 on:

- an actual basis;
- a pro forma basis to give effect to:
    - the conversion of all outstanding shares of our preferred stock into an aggregate of 19,157,360 shares of our common stock upon the completion of this offering;
    - all outstanding warrants to purchase shares of series seed preferred stock becoming warrants to purchase shares of common stock upon the completion of this offering;
    - all outstanding shares of our common A stock being repurchased by us and canceled immediately prior to the completion of this offering; and
    - the filing and effectiveness, as of immediately prior to the completion of this offering, of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws.
- on a pro forma as adjusted basis to give further effect to our issuance and sale of 6,700,000 shares of common stock in this offering at the initial public offering price of $15.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma and pro forma as adjusted information below assumes that this offering was completed on March 31, 2018. You should read the information in this table together with the information contained in this prospectus, including "Use of proceeds," "Management's discussion and analysis of financial condition

and results of operations" and "Description of capital stock" and our consolidated financial statements and related notes appearing at the end of this prospectus.

	As of March 31, 2018		
	Actual	Pro forma	Pro forma as adjusted
	(Amounts in thousands, except share and per share data)		
Cash and cash equivalents and short-term investments	$ 61,551	$ 61,551	$ 152,316
Warrant liability	$ 1,642	$ —	$ —
Convertible preferred stock (series seed, A and B), $0.001 par value; 1,975,968 shares authorized as of March 31, 2018; 1,925,968 shares issued and outstanding as of March 31, 2018; no shares issued or outstanding, pro forma and pro forma as adjusted as of March 31, 2018	86,361	—	—
Stockholders' equity (deficit):			
Common stock, $0.001 par value; 27,314,288 shares authorized (inclusive of 26,258 shares of common A stock) as of March 31, 2018; 5,007,485 shares issued and outstanding (inclusive of 26,258 shares of common A stock) as of March 31, 2018; 24,138,587 shares issued and outstanding, pro forma as of March 31, 2018; 30,838,587 shares issued and outstanding, pro forma as adjusted as of March 31, 2018	5	24	31
Additional paid-in capital	1,097	89,081	179,839
Accumulated deficit	(28,932)	(28,932)	(28,932)
Accumulated other comprehensive loss	(238)	(238)	(238)
Total stockholders' equity (deficit)	(28,068)	59,935	150,700
Total capitalization	$ 59,935	$ 59,935	$ 150,700

The actual, pro forma and pro forma as adjusted information set forth in the table excludes:

- 2,520,247 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2018 at a weighted average exercise price of $2.72 per share;
- 3,486,118 shares of common stock reserved for future issuance under our 2018 Plan, which became effective upon the effectiveness of the registration statement of which this prospectus is a part;
- 348,612 shares of our common stock reserved for future issuance under our ESPP, which became effective upon the effectiveness of the registration statement of which this prospectus is a part;
- 131,850 shares of our common stock reserved for future issuance as of March 31, 2018 under our 2017 Plan, which became available for issuance under our 2018 Plan upon the effectiveness of our 2018 Plan; and
- 497,344 shares of common stock issuable upon the exercise of warrants outstanding as of March 31, 2018 at an exercise price of $1.01 per share.

Dilution

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

Our historical net tangible book value (deficit) as of March 31, 2018 was $(28.1) million, or $(5.63) per share of our common stock. Our historical net tangible book value (deficit) is the amount of our total tangible assets less our total liabilities and the carrying value of our preferred stock, which is not included within our stockholders' equity (deficit). Historical net tangible book value per share represents historical net tangible book value (deficit) divided by the number of shares of our common stock issued as of March 31, 2018.

Our pro forma net tangible book value as of March 31, 2018 was $59.9 million, or $2.48 per share of our common stock. Pro forma net tangible book value (deficit) represents the amount of our total tangible assets less our total liabilities, after giving effect to (i) the conversion of all outstanding shares of our preferred stock into an aggregate of 19,157,360 shares of common stock upon the completion of this offering and (ii) all outstanding warrants to purchase shares of series seed preferred stock becoming warrants to purchase shares of common stock upon the completion of this offering, in each case assuming that this offering was completed on March 31, 2018. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares of our common stock issued as of March 31, 2018, after giving effect to the conversion of all outstanding shares of our preferred stock into an aggregate of 19,157,360 shares of our common stock upon the completion of this offering.

After giving further effect to our sale of 6,700,000 shares of common stock in this offering at the initial public offering price of $15.00 per share, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of March 31, 2018 would have been $150.7 million, or $4.89 per share. This represents an immediate increase in pro forma as adjusted net tangible book value per share of $2.41 to our existing stockholders and an immediate dilution in pro forma as adjusted net tangible book value per share of $10.11 to new investors purchasing common stock in this offering. Dilution per share to new investors purchasing common stock in this offering is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by new investors.

The following table illustrates this dilution on a per share basis assuming the underwriters do not exercise their option to purchase additional shares of common stock:

Initial public offering price per share		$ 15.00
Historical net tangible book value (deficit) per share as of March 31, 2018	$ (5.63)	
Increase per share attributable to the pro forma adjustments described above	8.11	
Pro forma net tangible book value per share as of March 31, 2018	2.48	
Increase in pro forma as adjusted net tangible book value per share attributable to new investors purchasing common stock in this offering	2.41	
Pro forma as adjusted net tangible book value per share after this offering		4.89
Dilution per share to new investors purchasing common stock in this offering		$ 10.11

If the underwriters exercise their option to purchase additional shares of common stock in this offering in full at the initial public offering price of $15.00 per share, after deducting underwriting discounts and

commissions and estimated offering expenses payable by us, the pro forma as adjusted net tangible book value per share after this offering would be $5.17 per share, and the decrease in dilution in pro forma as adjusted net tangible book value per share to new investors purchasing common stock in this offering would be $0.28 per share.

The following table summarizes, as of March 31, 2018 on the same pro forma as adjusted basis as described above, the total number of shares of common stock purchased from us, the total cash consideration paid to us and the average price per share of common stock paid by our existing investors and by new investors purchasing shares of common stock in this offering at the initial public offering price of $15.00 per share, before deducting underwriting discounts and commissions and estimated offering expenses payable by us. As the table shows, new investors purchasing common stock in this offering will pay an average price per share substantially higher than our existing investors paid.

	Shares of common stock purchased		Total consideration		Average price per share of common stock
	Number	Percent	Amount	Percent	
Existing investors	24,138,157	78.3%	$ 86,949,678	46.4%	$ 3.60
New investors	6,700,000	21.7	100,500,000	53.6	15.00
Total	30,838,587	100.0%	$ 187,449,678	100.0%	

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of shares of our common stock held by existing stockholders would be reduced to 75.8% of the total number of shares of our common stock outstanding after this offering, and the number of shares of common stock held by new investors participating in the offering would be increased to 24.2% of the total number of shares outstanding after this offering.

The table above does not include:

- 2,520,247 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2018 at a weighted average exercise price of $2.72 per share;
- 3,486,118 shares of common stock reserved for future issuance under our 2018 Plan, which became effective upon the effectiveness of the registration statement of which this prospectus is a part;
- 348,612 shares of our common stock reserved for future issuance under our ESPP, which became effective upon the effectiveness of the registration statement of which this prospectus is a part;
- 131,850 shares of our common stock reserved for future issuance as of March 31, 2018 under our 2017 Plan, which became available for issuance under our 2018 Plan upon the effectiveness of our 2018 Plan;
- 497,344 shares of common stock issuable upon the exercise of warrants outstanding as of March 31, 2018 at an exercise price of $1.01 per share; and
- 26,258 shares of common A stock outstanding as of March 31, 2018, all of which will be repurchased by us and canceled immediately prior to the completion of this offering.

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 are exercised, new options are issued and exercised under our equity incentive plan or we issue additional shares of common stock, other equity securities or convertible debt securities in the future. See "Risk factors—If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares."

Selected consolidated financial data

You should read the following selected consolidated financial data together with our consolidated financial statements and the related notes appearing at the end of this prospectus and the "Management's discussion and analysis of financial condition and results of operations" section of this prospectus. We have derived the consolidated statement of operations data for the years ended March 31, 2017 and 2018 and the consolidated balance sheet data as of March 31, 2017 and 2018 from our audited consolidated financial statements appearing at the end of this prospectus. Our historical results are not necessarily indicative of results that should be expected in any future period.

	Year ended March 31,	
	2017	2018
	(Amounts in thousands, except share and per share data)	
Consolidated statement of operations data		
Operating expenses:		
Research and development	$ 6,936	$ 13,516
General and administrative	2,711	5,713
Total operating expenses	9,647	19,229
Loss from operations	(9,647)	(19,229)
Other income (expense):		
Research and development incentives	1,442	2,267
Interest income	25	288
Change in fair value of warrant liability	(150)	(972)
Other income (expense), net	626	(2,056)
Total other income (expense), net	1,943	(473)
Net loss	(7,704)	(19,702)
Net loss attributable to common stockholders	$ (7,704)	$ (19,702)
Net loss per share attributable to common stockholders, basic and diluted[(1)]	$ (1.55)	$ (3.96)
Weighted average common shares outstanding, basic and diluted[(1)]	4,973,439	4,978,539
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)[(1)]		$ (0.87)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)[(1)]		21,506,697

(1) See Note 12 to our consolidated financial statements appearing at the end of this prospectus for further details on the calculation of basic and diluted net loss per share attributable to common stockholders and unaudited basic and diluted pro forma net loss per share attributable to common stockholders.

	March 31, 2017	March 31, 2018
	(Amounts in thousands)	
Consolidated balance sheet data		
Cash and cash equivalents and short-term investments	$ 20,594	$ 61,551
Working capital[(1)]	20,417	59,539
Total assets	22,819	65,151
Warrant liability	670	1,642
Total liabilities	2,725	6,858
Convertible preferred stock	31,609	86,361
Total stockholders' equity (deficit)	(11,515)	(28,068)

(1) 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 this discussion and analysis of our financial condition and consolidated results of operations together with the consolidated financial statements, related notes and other financial information included in this prospectus. The following discussion and other parts of this prospectus may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed under "Risk factors" and elsewhere in this prospectus. These risks could cause our actual results to differ materially from any future performance suggested below. Accordingly, you should read "Special note regarding forward-looking statements" and "Risk factors."

Overview

We are a clinical-stage biotechnology company committed to applying our leading expertise in the field of oncolytic immunotherapy to transform the lives of cancer patients. We use our proprietary Immulytic platform to design and develop product candidates that are intended to maximally activate the immune system against solid tumors. We are conducting a Phase 1/2 clinical trial in the United Kingdom and, pending the opening of an IND, in the United States with our lead product candidate, RP1, in approximately 150 patients with a range of solid tumors. In addition, in the first half of 2019, we plan to initiate a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with cutaneous squamous cell carcinoma, or CSCC, which we are designing to potentially support product registration. We also intend to initiate a clinical trial for our second product candidate, RP2, in the first half of 2019.

Oncolytic immunotherapy is an emerging class of cancer treatment that exploits the ability of certain viruses to selectively replicate in and directly kill tumors, as well as induce a potent, patient-specific, anti-tumor immune response. Such oncolytic, or "cancer killing," viruses have the potential to generate an immune response targeted to an individual patient's particular set of tumor antigens, including to neo-antigens that are uniquely present in tumors. Our product candidates incorporate multiple mechanisms of action into single product candidates in a practical, "off-the-shelf" format that is intended to maximize the immune response against a patient's cancer and to offer significant advantages over personalized vaccine approaches. Our management team has worked together for more than ten years and successfully developed the first oncolytic immunotherapy, Imlygic, also known as T-Vec, which was approved by the FDA for the treatment of advanced melanoma in 2015.

The foundation of our Immulytic platform consists of a proprietary, engineered strain of herpes simplex virus 1, or HSV-1, that has been "armed" with a fusogenic therapeutic protein intended to substantially increase anti-tumor activity. Our platform enables us to design multiple product candidates that incorporate various further genes whose expression is intended to augment the inherent properties of HSV-1 to both directly destroy tumor cells and induce an anti-tumor immune response.

We believe our lead product candidate, RP1, and our other product candidates will be effective at killing tumors and inducing immunogenic, or immune-stimulating, tumor cell death and that it will be highly synergistic with immune checkpoint blockade therapies.

We began operations as Replimune Limited, an English limited company that was incorporated in 2015. On July 5, 2017, Replimune Group, Inc., a Delaware corporation, was incorporated and, on July 10, 2017, the shareholders of Replimune Limited effected a share-for-share exchange pursuant to which they exchanged their outstanding shares in Replimune Limited for shares in Replimune Group, Inc., on a one-for-one basis.

In addition, the holders of warrants to purchase shares of series seed preferred stock and stock options to acquire Replimune Limited capital stock canceled their warrants and stock options in Replimune Limited and were issued replacement warrants and stock options to acquire Replimune Group, Inc. capital stock on a one-for-one basis. We refer to these transactions collectively as the reorganization. Upon completion of the reorganization, the historical consolidated financial statements of Replimune Limited became the historical consolidated financial statements of Replimune Group, Inc. because the reorganization was accounted for similar to a reorganization of entities under common control due to the high degree of common ownership of Replimune Limited and Replimune Group, Inc. and lack of economic substance to the transaction. We concluded that the reorganization resulted in no change in the material rights and preferences of each respective class of equity interests and no change in the fair value of each respective class of equity interests before and after the reorganization. On December 8, 2017, Replimune Limited transferred all outstanding shares of its wholly owned subsidiary, Replimune, Inc., to Replimune Group, Inc., a Delaware corporation. Replimune Group, Inc. is the sole shareholder of Replimune Limited, Replimune, Inc. and Replimune Securities Corporation, a Massachusetts corporation that was incorporated in November 2017.

Except as otherwise indicated or the context otherwise requires, all information in this prospectus is presented giving effect to the reorganization.

Financial overview

Since our inception, we have devoted substantially all of our resources to developing our Immulytic platform and our lead product candidate, RP1, building our intellectual property portfolio, conducting research and development of our product candidates, business planning, raising capital and providing general and administrative support for our operations. To date, we have financed our operations primarily with proceeds from the sale of convertible preferred stock or preferred stock. Through March 31, 2018, we had received gross proceeds of $86.9 million from our sales of preferred stock. We do not have any products approved for sale and have not generated any revenue from product sales.

Since our inception, we have incurred significant operating losses. Our ability to generate product revenue sufficient to achieve profitability will depend on the successful development and eventual commercialization of one or more of our product candidates. Our net losses were $7.7 million for the year ended March 31, 2017 and $19.7 million for the year ended March 31, 2018. As of March 31, 2018, we had an accumulated deficit of $28.9 million. These losses have resulted primarily from costs incurred in connection with research and development activities and general and administrative costs associated with our operations. We expect to continue to incur significant expenses and increasing operating losses for at least the next several years.

We anticipate that our expenses and capital requirements will increase substantially in connection with our ongoing activities, particularly as we advance the preclinical activities and clinical trials of our product candidates. In addition, we expect to incur additional costs associated with operating as a public company following the completion of this offering. We expect that our expenses and capital requirements will increase substantially if and as we:

- conduct our current and future clinical trials with RP1;
- progress the preclinical and clinical development of RP2 and RP3;
- establish, equip, and operate our own in-house manufacturing facility;

- seek to identify and develop additional product candidates;
- seek marketing approvals for any of our product candidates that successfully complete clinical trials, if any;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- maintain, expand and protect our intellectual property portfolio;
- acquire or in-license other drugs and technologies;
- hire and retain additional clinical, quality control, scientific and finance personnel; and
- add operational, financial and management information systems and personnel, including personnel to support our research and development programs, any future commercialization efforts and our transition to operating as a public company following the completion of this offering.

We will not generate revenue from product sales unless and until we successfully complete clinical development and obtain regulatory approval for RP1 or our other product candidates. If we obtain regulatory approval for any of our product candidates and do not enter into a commercialization partnership, we expect to incur significant expenses related to developing our internal commercialization capability to support product sales, marketing, and distribution. Further, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company.

As a result, we will need substantial additional funding to support our continuing operations and pursue our growth strategy. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through a combination of equity offerings, debt financings, collaborations, strategic alliances, and marketing, distribution, or licensing arrangements. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back, or discontinue the development and commercialization of one or more of our product candidates.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve or maintain profitability. Even if we are able to generate product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

As of March 31, 2018, we had cash and cash equivalents and short-term investments of $61.6 million. We believe that the expected net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments will enable us to fund our operating expenses and capital expenditure requirements into the second half of 2021. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See "—Liquidity and capital resources" and "Risk factors—Risks related to our financial position and need for additional capital."

Components of our results of operations

Revenue

To date, we have not generated any revenue from product sales as we do not have any approved products and do not expect to generate any revenue from the sale of products in the near future. If our development efforts for RP1 or any other product candidates that we may develop in the future are successful and result in regulatory approval, or if we enter into collaboration or license agreements with third parties, we may generate revenue in the future from a combination of product sales or payments from those collaboration or license agreements.

Operating expenses

Our expenses since inception have consisted solely of research and development costs and general and administrative costs.

Research and development expenses

Research and development expenses consist primarily of costs incurred for our research activities, including our discovery efforts and the development of RP1 and our other product candidates, and include:

- expenses incurred under agreements with third parties, including CROs that conduct research, preclinical activities and clinical trials on our behalf as well as CMOs that manufacture our product candidates for use in our preclinical and clinical trials;
- salaries, benefits and other related costs, including stock-based compensation expense, for personnel engaged in research and development functions;
- costs of outside consultants, including their fees, stock-based compensation and related travel expenses;
- the costs of laboratory supplies and acquiring, developing and manufacturing preclinical study and clinical trial materials;
- costs related to compliance with regulatory requirements in connection with the development of RP1 and our other product candidates; and
- facility-related expenses, which include direct depreciation costs and allocated expenses for rent and maintenance of facilities and other operating costs.

We expense research and development costs as incurred. We recognize external development costs based on an evaluation of the progress to completion of specific tasks using information provided to us by our service providers. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected in our consolidated financial statements as prepaid or accrued research and development expenses.

Our direct external research and development expenses are tracked on a program-by-program basis and consist of costs, such as fees paid to consultants, contractors, CMOs, and CROs in connection with our preclinical and clinical development activities. To date, we have not allocated expenses to our earlier-stage programs for RP2 and RP3. In addition, we do not allocate employee costs, costs associated with our discovery efforts, laboratory supplies, and facilities, including depreciation or other indirect costs, to specific product development programs because these costs are deployed across multiple product development programs and, as such, are not separately classified.

The table below summarizes our research and development expenses by product candidate or development program for each of the periods presented:

	Year ended March 31,	
	2017	2018
	(Amounts in thousands)	
RP1	$ 3,874	$ 7,250
Unallocated research and development expenses	3,062	6,266
Total research and development expenses	$ 6,936	$ 13,516

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will continue to increase for the foreseeable future as we initiate additional clinical trials of RP1, complete preclinical development and pursue initial stages of clinical development of RP2 and RP3 and continue to discover and develop additional product candidates. The successful development and commercialization of our product candidates is highly uncertain. This is due to the numerous risks and uncertainties associated with product development and commercialization, including the following:

- the scope, rate of progress, expense and results of our ongoing clinical trials of RP1, as well as of any future clinical trials of RP2 and RP3 or other product candidates and other research and development activities that we may conduct;
- the number and scope of preclinical and clinical programs we decide to pursue;
- our ability to maintain our current research and development programs and to establish new ones;
- uncertainties in clinical trial design and patient enrollment rates;
- the successful completion of clinical trials with safety, tolerability, and efficacy profiles that are satisfactory to the FDA or any comparable foreign regulatory authority;
- the receipt of regulatory approvals from applicable regulatory authorities;
- our success in establishing, equipping, and operating a manufacturing facility, or securing manufacturing supply through relationships with third parties;
- our ability to obtain and maintain patents, trade secret protection, and regulatory exclusivity, both in the United States and internationally;
- our ability to protect our rights in our intellectual property portfolio;
- the commercialization of our product candidates, if and when approved;
- the acceptance of our product candidates, if approved, by patients, the medical community, and third-party payors;
- our ability to successfully develop our product candidates for use in combination with third-party products or product candidates;

- negative developments in the field of immuno-oncology;
- competition with other products; and
- significant and changing government regulation and regulatory guidance.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA or another regulatory authority were to require us to conduct clinical trials beyond those that we anticipate will be required for the completion of clinical development of a product candidate, or if we experience significant trial delays due to patient enrollment or other reasons, we would be required to expend significant additional financial resources and time on the completion of clinical development. We may never succeed in obtaining regulatory approval for any of our product candidates.

We expect to use approximately $20.0 million of the proceeds from this offering to fund the development of RP1 through the completion of the ongoing Phase 1/2 clinical trial in four solid tumor types, approximately $15.0 million to fund our share of the costs to fully recruit our planned Phase 2 clinical trial with RP1 in CSCC, approximately $20.0 million to fund the completion of the preclinical development and the initial clinical trials of RP2 in approximately 100 patients, approximately $10.0 million to fund the completion of preclinical development and a Phase 1 clinical trial of RP3, and approximately $20.0 million to fund capital expenditures associated with establishing and equipping our planned manufacturing facility in Framingham, Massachusetts. However, because the design and outcome of planned and anticipated clinical trials is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of RP1 or our other product candidates.

General and administrative expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation, for personnel in our executive, finance, corporate and business development and administrative functions. General and administrative expenses also include professional fees for legal, patent, accounting, auditing, tax and consulting services; travel expenses; and facility-related expenses, which include direct depreciation costs and allocated expenses for rent and maintenance of facilities and other operating costs.

We expect that our general and administrative expenses will increase in the future as we increase our general and administrative headcount to support our continued research and development and potential commercialization of our product candidates. We also expect to incur increased expenses associated with being a public company following the completion of this offering, including costs of accounting, audit, legal, regulatory and tax-related services associated with maintaining compliance with exchange listing and SEC requirements; director and officer insurance costs; and investor and public relations costs.

Other income (expense), net

Research and development incentives

Research and development incentives consists of reimbursements of research and development expenditures. We participate, through our subsidiary in the United Kingdom, in the research and development program provided by the United Kingdom tax relief program, such that a percentage of up to 14.5% of our qualifying research and development expenditures are reimbursed by the United Kingdom government, and such incentives are reflected as other income.

Change in fair value of warrant liability

In connection with the issuance of the series seed preferred stock we issued to the series seed preferred stock holders warrants to purchase shares of series seed preferred stock. We classify the warrants as a liability on our consolidated balance sheets. We remeasure the warrant liability to fair value at each reporting date and recognize changes in the fair value of the warrant liability as a component of other income (expense), net in our consolidated statements of operations. We will continue to recognize changes in the fair value of the warrant liability until the warrants are exercised, expire or qualify for equity classification.

Upon the completion of this offering, the warrants to purchase shares of series seed preferred stock will become exercisable for shares of common stock instead of shares of preferred stock, and the warrant liability will be reclassified to additional paid-in capital. As a result, following the completion of this offering, we will no longer recognize changes in the fair value of the warrant liability as other income (expense), net in our consolidated statements of operations.

Interest income

Interest income consists of income earned on our cash and cash equivalents and short-term investments. Our interest income has not been significant due to low investment balances and low interest earned on those balances.

Other income (expense), net

Other income (expense), net consists primarily of realized and unrealized foreign currency transaction gains and losses.

Income taxes

Since our inception and through March 31, 2018, we have not recorded any income tax benefits for the net losses we incurred in each jurisdiction in which we operate, as we believe, based upon the weight of available evidence, that it is more likely than not that all of our net operating loss carryforwards will not be realized.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act, or the Tax Act. The Tax Act includes a number of changes to existing tax law, including, among other things, a permanent reduction in the federal corporate income tax rate from a top marginal rate of 35% to a flat rate of 21%, effective as of January 1, 2018, as well as limitation of the deduction for net operating losses to 80% of annual taxable income and elimination of net operating loss carrybacks, in each case, for losses arising in taxable years beginning after December 31, 2017 (though any such net operating losses may be carried forward indefinitely). Under the Tax Act, our deferred tax assets and liabilities (before valuation allowance) were remeasured at the lower federal tax rate, resulting in an increase to our income tax provision with an equal and offsetting reduction in our valuation allowance. All of our recorded income tax benefits and provisions related to the Tax Act are provisional.

Results of operations

Comparison of the years ended March 31, 2017 and 2018

The following table summarizes our results of operations for the years ended March 31, 2017 and 2018:

	Year ended March 31,		
	2017	2018	Change
	(Amounts in thousands)		
Operating expenses:			
Research and development	$ 6,936	$ 13,516	$ 6,580
General and administrative	2,711	5,713	3,002
Total operating expenses	9,647	19,229	9,582
Loss from operations	(9,647)	(19,229)	(9,582)
Other income (expense):			
Research and development incentives	1,442	2,267	825
Interest income	25	288	263
Change in fair value of warrant liability	(150)	(972)	(822)
Other income (expense), net	626	(2,056)	(2,682)
Total other income (expense), net	1,943	(473)	(2,416)
Net loss	$ (7,704)	$ (19,702)	$ (11,998)

Research and development expenses

	Year ended March 31,		
	2017	2018	Change
	(Amounts in thousands)		
Direct research and development expenses by program:			
RP1	$ 3,874	$ 7,250	$ 3,376
Unallocated research and development expenses:			
Personnel related (including stock-based compensation)	2,121	4,120	1,999
Other	941	2,146	1,205
Total research and development expenses	$ 6,936	$ 13,516	$ 6,580

Research and development expenses for the year ended March 31, 2017 were $6.9 million, compared to $13.5 million for the year ended March 31, 2018. The increase of $6.6 million was due primarily to an increase of approximately $3.4 million in direct research costs associated with RP1 and an approximately $3.2 million increase in our unallocated research and development costs. The increase in RP1 costs was due primarily to an increase in clinical trial costs in the year ended March 31, 2018 associated with our ongoing Phase 1/2 clinical trial, which commenced in the United Kingdom in October 2017.

The increase in unallocated research and development expenses reflected an increase of $2.0 million in personnel-related costs, including stock-based compensation, and an increase of $1.2 million in other costs. The increase in personnel-related costs was primarily due to the hiring of additional personnel in our research and development functions as we began work on our planned Phase 2 clinical trial of RP1 in patients with CSCC. Personnel-related costs for each of the years ended March 31, 2017 and 2018 included

stock-based compensation expense of $0.2 million and $0.8 million, respectively. Other costs increased primarily due to purchases of supplies used across all of our product candidates.

General and administrative expenses

General and administrative expenses were $2.7 million for the year ended March 31, 2017, compared to $5.7 million for the year ended March 31, 2018. The increase of $3.0 million primarily reflected increases of $1.1 million in personnel related costs and $1.6 million in professional fees. The increase in personnel related costs was due to the hiring of additional personnel in our general and administrative functions as we expanded our operations in the United States.

Other income (expense), net

Other income (expense) was $1.9 million for the year ended March 31, 2017, compared to $(0.5) million for the year ended March 31, 2018. The decrease of $2.4 million was primarily attributable to a $2.7 million increase in the expense due to a change in foreign exchange rates and a $0.8 million increase in the expense due to a change in the fair value of the warrant liability, partially offset by a $0.8 million increase in expenditure reimbursements recognized under the research and development program provided by the United Kingdom government and a $0.3 million increase in interest income.

Liquidity and capital resources

Since our inception, we have not generated any revenue from product sales and have incurred significant operating losses and negative cash flows from our operations. We have not yet commercialized any of our product candidates, which are in various phases of preclinical and clinical development, and we do not expect to generate revenue from sales of any products for the foreseeable future, if at all.

Sources of liquidity

To date, we have financed our operations primarily with proceeds from the sale of convertible preferred stock. Through March 31, 2018, we had received gross proceeds of $86.9 million from our sales of preferred stock. As of March 31, 2018, we had cash and cash equivalents and short-term investments of $61.6 million.

Cash flows

The following table summarizes our cash flows for each of the periods presented:

	Year ended March 31,	
	2017	2018
	(Amounts in thousands)	
Net cash used in operating activities	$ (7,077)	$ (16,014)
Net cash used in investing activities	(238)	(44,046)
Net cash provided by financing activities	15,000	54,752
Effect of exchange rate changes on cash and cash equivalents	(1,419)	2,297
Net increase (decrease) in cash and cash equivalents	$ 6,266	$ (3,011)

Operating activities

During the year ended March 31, 2018, net cash used in operating activities was $16.0 million, primarily resulting from our net loss of $19.7 million, partially offset by net cash provided by changes in our operating assets and liabilities of $1.9 million and non-cash charges of $1.8 million. Net cash provided by

changes in our operating assets and liabilities for the year ended March 31, 2018 consisted primarily of a $1.6 million increase in accounts payable and a $1.4 million increase in accrued expenses and other current liabilities, partially offset by a $0.8 million increase in the research and development incentives receivable from the United Kingdom government due to the timing and amount of our qualifying expenditures and a $0.3 million increase in prepaid expenses and other current assets due to CRO deposits related to the ongoing Phase 1/2 clinical trial for RP1.

During the year ended March 31, 2017, net cash used in operating activities was $7.1 million, primarily resulting from our net loss of $7.7 million, partially offset by non-cash charges of $0.5 million, and net cash provided by changes in our operating assets and liabilities of $0.1 million. Net cash used by changes in our operating assets and liabilities for the year ended March 31, 2017 consisted primarily of a $0.2 million increase in accounts payable and a $1.4 million increase in accrued expenses due to accrued RP1 clinical trial costs, accrued compensation costs and accrued audit fees, partially offset by a $1.2 million increase in the research and development incentives receivable from the United Kingdom government due to the timing and amount of our qualifying expenditures and a $0.3 million increase in prepaid expenses and other current assets due to value-added tax receivables and CMO deposits for RP1 clinical trial supplies.

Investing activities

During the year ended March 31, 2018, net cash used in investing activities was $44.0 million, consisting of $52.5 million in purchases of available for sale securities and $0.1 million in purchases of property, plant and equipment, partially offset by $8.6 million in proceeds from maturities of short-term investments.

During the year ended March 31, 2017, net cash used in investing activities was $0.2 million, consisting of purchases of property, plant and equipment.

We expect that purchases of property, plant and equipment will increase over the next several years resulting from our intended establishment of our own in-house manufacturing facility.

Financing activities

During the year ended March 31, 2018, net cash provided by financing activities was $54.8 million, primarily consisting of net proceeds from our issuance of series B convertible preferred stock, or series B preferred stock.

During the year ended March 31, 2017, net cash provided by financing activities was $15.0 million, primarily consisting of proceeds from our issuance of series A convertible preferred stock, or series A preferred stock.

Funding requirements

Our plan of operation is to continue implementing our business strategy, continue research and development of RP1 and our other product candidates and continue to expand our research pipeline and our internal research and development capabilities. We expect our expenses to increase substantially in connection with our ongoing activities, particularly as we advance the preclinical activities and clinical trials of our product candidates. In addition, we expect to incur additional costs associated with operating as a public company following the completion of this offering. We expect that our expenses will increase substantially if and as we:

- conduct our current and future clinical trials of RP1;
- progress the preclinical and clinical development of RP2 and RP3;
- establish, equip, and operate our own in-house manufacturing facility;

- seek to identify and develop additional product candidates;
- seek marketing approvals for any of our product candidates that successfully complete clinical trials, if any;
- establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval;
- until our planned manufacturing facility is operational, require the manufacture by third parties of larger quantities of our product candidates for clinical development and potentially commercialization;
- maintain, expand and protect our intellectual property portfolio;
- acquire or in-license other drugs and technologies; and
- add operational, financial and management information systems and personnel, including personnel to support our research and development programs, any future commercialization efforts and our transition to operating as a public company following the completion of this offering.

As of March 31, 2018, we had cash and cash equivalents and short-term investments of $61.6 million. We believe that the anticipated net proceeds from this offering, together with our existing cash and cash equivalents and short-term investments, will enable us to fund our operating expenses and capital expenditure requirements into the second half of 2021. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect.

Because of the numerous risks and uncertainties associated with the development of RP1 and other product candidates and programs, and because the extent to which we may enter into collaborations with third parties for development of our product candidates is unknown, we are unable to estimate the timing and amounts of increased capital outlays and operating expenses associated with completing the research and development of our product candidates. Our future capital requirements will depend on many factors, including those described in this section and above under "—Operating expenses—Research and development expenses."

In addition, we intend to establish, equip, and operate an in-house manufacturing facility to manufacture RP1 and our other product candidates. We expect that such a facility would require capital expenditures of approximately $20.0 million to commence operations.

Developing novel biopharmaceutical products, including conducting preclinical studies and clinical trials, is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval for any product candidates or generate revenue from the sale of any products for which we may obtain marketing approval. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of therapies that we do not expect to be commercially available for many years, if ever. Accordingly, we will need to obtain substantial additional funds to achieve our business objectives.

Adequate additional funds may not be available to us on acceptable terms, or at all. We do not currently have any committed external source of funds. To the extent that we raise additional capital through the sale of our equity or convertible debt securities, your ownership interest may be diluted, and the terms of these securities may include liquidation or other preferences and anti-dilution protections that could adversely affect your rights as a common stockholder. Additional debt or preferred equity financing, if available, may involve agreements that include restrictive covenants that may limit our ability to take specific actions, such as incurring debt, making capital expenditures or declaring dividends, which could

adversely impact our ability to conduct our business, and may require the issuance of warrants, which could potentially dilute your ownership interest.

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

Contractual obligations and commitments

The following table summarizes our contractual obligations as of March 31, 2018 and the effects that such obligations are expected to have on our liquidity and cash flows in future periods:

	Payments due by period				
	Total	Less than 1 year	1 to 3 years	4 to 5 years	More than 5 years
	(Amounts in thousands)				
Manufacturing commitments[1]	$ 2,938	$ 2,938	$ —	$ —	$ —
Operating lease commitments[2][3]	1,421	474	947	—	—
Total	$ 4,359	$ 3,412	$ 947	$ —	$ —

(1) Amounts in the table reflect commitments for costs associated with our external CMO, which we engaged to manufacture clinical trial materials.

(2) Amounts in the table reflect minimum payments due under our two leases of laboratory and office space in Woburn, Massachusetts and Oxfordshire, United Kingdom, at a monthly commitment of $7 and $31, respectively. These leases are both operating leases. Our lease in Woburn expires in March 2021, and our lease in Oxfordshire expires in April 2026 and is terminable by us in April 2021.

(3) In June 2018, we entered into an agreement to lease approximately 63,000 square feet of office, manufacturing and laboratory space within a previously occupied building with approximately 106,000 square feet of rentable space in Framingham, Massachusetts. Pursuant to the lease agreement, the lease term is estimated to commence in November 2018, subject to the landlord completing certain agreed upon landlord improvements. The rent commencement date is estimated to be eight months after the commencement of the lease term. The initial lease term is ten years from the rent commencement date and includes two optional five year extensions. As a result of the new lease agreement, our contractual obligations will increase by the following amounts over the initial ten year lease term (which are not reflected in the table above):

	Payments due by period				
	Total	Less than 1 year	1 to 3 years	4 to 5 years	More than 5 years
	(in thousands)				
Operating lease commitments	27,205	—	6,496	5,213	15,496

We enter into contracts in the normal course of business with CROs, CMOs and other third parties for clinical trials and preclinical research studies and testing. Manufacturing and research commitments in the preceding table include agreements that are enforceable and legally binding on us and that specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. For obligations with cancellation provisions, the amounts included in the preceding table are limited to the non-cancelable portion of the agreement terms or the minimum cancellation fee.

Collaborations

BMS

On February 26, 2018, we entered into a Clinical Trial Collaboration and Supply Agreement with Bristol- Myers Squibb Company, or BMS. Pursuant to the agreement, BMS will provide to us, at no cost, nivolumab, its anti-PD-1 therapy, for use in combination with RP1 in our ongoing Phase 1/2 clinical trial. Under the agreement, we will sponsor, fund and conduct the clinical trial in accordance with an agreed-upon protocol. Under the agreement, BMS granted us a non-exclusive, non-transferrable, royalty-free license (with a right to sublicense) under its intellectual property to use nivolumab in the clinical trial and has agreed to manufacture and supply nivolumab, at its cost and for no charge to us, for use in the clinical trial. Both parties will own the study data produced in the clinical trial, other than study data related solely to nivolumab, which will belong solely to BMS or study data related solely to RP1, which will belong solely to us.

Unless earlier terminated, the agreement will remain in effect until (i) the completion of the clinical trial, (ii) all related clinical trial data have been delivered to both parties and (iii) the completion of any statistical analyses and bioanalyses contemplated by the clinical trial protocol or any analysis otherwise agreed upon by the parties. The agreement may be terminated by either party (i) in the event of an uncured material breach by the other party, (ii) in the event the other party is insolvent or in bankruptcy proceedings or (iii) for safety reasons. Upon termination, the licenses granted to us to use nivolumab in the clinical trial will terminate. The agreement contains representations, warranties, undertakings and indemnities customary for a transaction of this nature.

Regeneron

On May 29, 2018, we entered into a Master Clinical Trial Collaboration and Supply Agreement with Regeneron Pharmaceuticals, Inc., or Regeneron. Pursuant to the agreement we agreed to undertake one or more clinical trials with Regeneron for the administration of our product candidates in combination with cemiplimab, an anti-PD-1 therapy being developed by Regeneron, across multiple solid tumor types, the first of which is intended to be our planned Phase 2 clinical trial of RP1 in patients with CSCC. Each clinical trial will be conducted pursuant to an agreed study plan which, among other things, will identify the name of the sponsor and which party will manage the particular study, and include the protocol, the budget and a schedule of clinical obligations. The first study plan related to the Phase 2 clinical trial in CSCC has been agreed.

Pursuant to the terms of the agreement, each party granted the other party a non-exclusive license of their respective intellectual property and agreed to contribute the necessary resources needed to fulfill their respective obligations, in each case, under the terms of agreed study plans. Development costs of a particular clinical trial will be split equally. The agreement contains representations, warranties, undertakings and indemnities customary for a transaction of this nature. The agreement also contains certain covenants that restrict us from entering into a third-party arrangement with respect to the use of our product candidates in combination with an anti-PD-1 therapy and that restrict Regeneron from entering into a third-party arrangement with respect to the use of cemiplimab in combination with an HSV-1 virus, in each case, for the treatment of a tumor type that is the subject of a clinical trial to which the covenants apply. Unless otherwise mutually agreed in a future study plan, these covenants are only applicable to our planned Phase 2 clinical trial in CSCC, and expire upon the one-year anniversary of the commencement of the applicable study plan.

The agreement may be terminated by either party if (i) there is no active study plan for which a final study report has not been completed, (ii) the parties have not entered into a study plan for an additional

clinical trial within a period of time after the delivery of the most recent final study report or (iii) in the event of a material breach.

Critical accounting policies and significant judgments and estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, costs and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in greater detail in Note 2 to our consolidated financial statements appearing at the end of this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Accrued research and development expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. 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 actual costs. The majority of our service providers invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advanced payments. We make estimates of our accrued expenses as of each balance sheet date in the consolidated financial statements based on facts and circumstances known to us at that time. Examples of estimated accrued research and development expenses include fees paid to:

- CROs in connection with performing research activities and conducting preclinical studies and clinical trials on our behalf;
- CMOs in connection with the production of preclinical and clinical trial materials;
- investigative sites or other service providers in connection with clinical trials;
- vendors in connection with preclinical and clinical development activities; and
- vendors related to product manufacturing and development and distribution of preclinical and clinical supplies.

We base our expenses related to preclinical studies and clinical trials on our estimates of the services received and efforts expended pursuant to quotes and contracts with multiple CMOs and CROs that supply, conduct and manage preclinical studies and clinical trials 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 expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. 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 the estimate, we adjust the accrual or the amount of prepaid expenses accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, there have not been any material adjustments to our prior estimates of accrued research and development expenses.

Stock-based compensation

We measure stock-based awards granted to employees and directors based on their fair value on the date of the grant and recognizes compensation expense for those awards over the requisite service period, which is generally the vesting period of the respective award. We have to date only issued stock-based awards with service-based vesting conditions and record the expense for these awards using the straight-line method. The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model, which requires inputs based on certain subjective assumptions, including the expected stock price volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option, and our expected dividend yield. See Note 10 to our consolidated financial statements appearing at the end of this prospectus for more information. Forfeitures are accounted for as they occur. The fair value of each stock-based award is estimated on the date of grant based on the fair value of our common stock on that same date.

For stock-based awards granted to consultants and non-employees, we recognize compensation expense over the period during which services are rendered by such non-employees and consultants until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option pricing model.

We classify stock-based compensation expense in our consolidated statements of operations in the same manner in which the award recipient's payroll costs are classified or in which the award recipient's service payments are classified.

Determination of the fair value of common stock

The estimated fair value of the common stock underlying our stock options was initially determined at each grant date by our board of directors, with input from management. All options to purchase shares of our common stock are intended to be exercisable at a price per share not less than the per-share fair value of our common stock underlying those options on the date of grant.

In the absence of a public trading market for our common stock, on each grant date, our board of directors made a reasonable determination of the fair value of our common stock based on the information known to us on the date of grant, and upon a review of any recent events and their potential impact on the estimated fair value per share of the common stock. Our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date, including:

- the prices at which we sold preferred stock and the superior rights and preferences of the preferred stock relative to our common stock at the time of each grant;
- the progress of our research and development programs, including the status of preclinical studies and planned clinical trials for our product candidates;
- our stage of development and our business strategy;

- external market conditions affecting the biotechnology industry, and trends within the biotechnology industry;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results;
- the lack of an active public market for our common stock and our preferred stock;
- the likelihood of achieving a liquidation event, such as an initial public offering, or IPO, or a sale of our company in light of prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the biopharmaceutical industry.

We subsequently obtained third-party valuations of our common stock as of the dates on which our board of directors had granted equity awards. See "—Options granted." These third-party valuations of common stock were prepared using the hybrid method, which used market approaches to estimate our equity value. The hybrid method is a probability-weighted expected return method, or PWERM, where the equity value in one or more of the scenarios is allocated using an option-pricing method, or OPM. The PWERM is a scenario-based methodology that estimates the fair value of common stock based upon an analysis of future values for the business, 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. A discount for lack of marketability of the common stock is then applied to arrive at an indication of value for the common stock. The OPM treats common stock and 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 exceeded the value of the preferred stock liquidation preferences at the time of the liquidation event, such as a strategic sale or a merger. These third-party valuations were performed at various dates, which resulted in valuations of our common stock of $1.26 per share as of March 10, 2016, $1.34 per share as of October 12, 2016, $1.63 per share as of March 10, 2017, $2.90 per share as of July 26, 2017 and $3.83 per share as of January 31, 2018.

The assumptions underlying these valuations represented our board of directors' best estimates at the time they were made, which involve inherent uncertainties and the application of the judgment of our board of directors. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different.

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 our board of directors to estimate the fair value of our common stock in connection with our accounting for granted stock options and other such awards we may grant, as the fair value of our common stock will be determined based on the quoted market price of our common stock.

Options granted

The following table sets forth, by grant date, the number of shares subject to options granted from April 1, 2016 through July 9, 2018, the per share exercise price of the options, the fair value of common stock per share on each grant date, and the per share estimated fair value of the options:

Grant Date	Number of shares subject to options granted	Per share exercise price of options	Fair value per common stock on grant date[(1)]	Per share estimated fair value of options on grant date
April 1, 2016	129,309	$ 1.75	$ 1.26	$ 0.76
June 1, 2016	39,787	$ 1.75	$ 1.26	$ 0.76
October 3, 2016	38,792	$ 1.75	$ 1.26	$ 0.76
October 12, 2016	34,811	$ 1.75	$ 1.34	$ 0.82
November 7, 2016	5,967	$ 1.75	$ 1.34	$ 0.82
January 21, 2017	43,169	$ 1.75	$ 1.34	$ 0.76
January 25, 2017	25,861	$ 1.75	$ 1.34	$ 0.83
March 10, 2017	64,651	$ 1.75	$ 1.63	$ 1.07
July 26, 2017	1,205,543	$ 3.30	$ 2.90	$ 1.86
August 2, 2017	9,946	$ 3.30	$ 2.90	$ 1.86
August 4, 2017	7,788	$ 3.30	$ 2.90	$ 2.25[(2)]
September 1, 2017	149,202	$ 3.30	$ 2.90	$ 1.86
September 4, 2017	4,973	$ 3.30	$ 2.90	$ 1.86
September 12, 2017	19,893	$ 3.30	$ 2.90	$ 1.86
September 25, 2017	12,433	$ 3.30	$ 2.90	$ 1.86
October 1, 2017	29,840	$ 3.30	$ 2.90	$ 1.87
January 21, 2018	68,872	$ 3.83	$ 3.83	$ 2.38
January 31, 2018	24,865	$ 3.83	$ 3.83	$ 2.57
February 16, 2018	49,734	$ 3.83	$ 3.83	$ 2.58
February 26, 2018	4,973	$ 3.83	$ 3.83	$ 2.58
March 5, 2018	9,946	$ 3.83	$ 3.83	$ 2.58

(1) For options granted between April 1, 2016 and March 10, 2017, our board of directors initially determined that the fair value of our common stock was $1.75 per share as of each respective grant date. For options granted between July 26, 2017 and October 1, 2017, our board of directors initially determined that the fair value of our common stock was $3.30 per share as of each respective grant date. However, as described below, the fair value of our common stock at the date of these grants was adjusted in connection with retrospective fair value assessments for accounting purposes.

(2) For purposes of recording stock-based compensation for grants of options to a non-employee, 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 remeasure the value of any unvested portion of the award based on the then-current fair value of the award and adjust the expense accordingly. The amount in this column reflects only the grant-date fair value of the award to a non-employee.

In the course of preparing for this offering, in February 2018, we performed retrospective fair value assessments for accounting purposes. We applied the fair values of our common stock from our retrospective fair value assessments to determine the fair value of these awards and calculate stock-based compensation expense for accounting purposes. These reassessed values were based, in part, upon third-party valuations of our common stock prepared as of each grant date on a retrospective basis. The third-party valuations were prepared using the hybrid method and used market approaches to determine our enterprise value.

Emerging growth company status

As an "emerging growth company," the JOBS Act permits us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to "opt out" of this provision and, as a result, we will comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

Internal control over financial reporting

During the audit of our consolidated financial statements as of and for the years ended March 31, 2017 and 2018, we identified material weaknesses in our internal control over financial reporting. A company's internal control over financial reporting is a process designed by, or under the supervision of, a company's principal executive and principal financial officers, or persons performing similar functions, and effected by a company's board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. Under standards established by the Public Company Accounting Oversight Board, a material weakness is a deficiency or combination of deficiencies in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected and corrected on a timely basis. The material weaknesses that we identified were as follows:

- We did not design or maintain an effective control environment commensurate with our financial reporting requirements. We lacked a sufficient number of professionals with an appropriate level of accounting knowledge, training and experience to appropriately analyze, record and disclose accounting matters timely and accurately. Additionally, the limited personnel resulted in our inability to consistently establish appropriate authorities and responsibilities in pursuit of our financial reporting objectives, as demonstrated by, among other things, our insufficient segregation of duties in our accounting function. This material weakness further contributed to the material weakness below.

- We did not design and maintain formal accounting policies, processes and controls to analyze, account for and disclose complex transactions, including accounting for preferred stock, stock-based compensation, warrant liabilities and leases.

These material weaknesses also resulted in adjustments to preferred stock, stock compensation expense, warrant liability and deferred rent in our consolidated financial statements as of and for the year ended March 31, 2017, which were recorded prior to their issuance.

We are in the process of implementing measures designed to improve our internal control over financial reporting and remediate the control deficiencies that led to the material weaknesses, including hiring additional finance and accounting personnel and initiating design and implementation of our financial control environment, including the establishment of formal accounting policies and procedures, financial reporting controls and controls to account for and disclose complex transactions.

We, and our independent registered public accounting firm, were not required to perform an evaluation of our internal control over financial reporting in accordance with the provisions of the Sarbanes-Oxley Act. Accordingly, we cannot assure you that we have identified all, or that we will not in the future have additional, material weaknesses. Material weaknesses may still exist when we report on the effectiveness of our internal control over financial reporting as required by reporting requirements under Section 404 after the completion of this offering. See "Risk factors—We have identified material weaknesses in our internal

control over financial reporting. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect our business."

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 in the rules and regulations of the SEC.

Recently issued accounting pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2 to our consolidated financial statements appearing at the end of this prospectus.

Quantitative and qualitative disclosures about market risks

Interest rate sensitivity

As of March 31, 2018, we had cash and cash equivalents and short-term investments of $61.6 million, which consisted of cash, commercial paper and commercial debt securities. Interest income is sensitive to changes in the general level of interest rates; however, due to the nature of these investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our investment portfolio.

As of March 31, 2018, we had no debt outstanding and are therefore not subject to interest rate risk related to debt.

Foreign currency exchange risk

Our headquarters are located in the United States, where the majority of our general and administrative expenses are incurred in U.S. dollars. The majority of our research and development costs are incurred by our subsidiary in Oxfordshire, United Kingdom, whose functional currency is the British Pound. We are exposed to foreign exchange rate risk. During the years ended March 31, 2017 and 2018, we recognized foreign currency transaction gains (losses) of $0.6 million, and $(2.1) million, respectively. These gains (losses) are primarily related to unrealized and realized foreign currency gains and losses as a result of transactions entered into by our United Kingdom subsidiary in currencies other than the British Pound, primarily the Euro. These foreign currency transaction gains (losses) were recorded as a component of other income (expense), net in our consolidated statements of operations. We believe that a 10% change in the exchange rate between the British Pound and the Euro would not have a material impact on our financial position or results of operations.

As we continue to grow our business, our results of operations and cash flows will be subject to fluctuations due to changes in foreign currency exchange rates, which could adversely impact our results of operations. To date, we have not entered into any foreign currency hedging contracts to mitigate our exposure to foreign currency exchange risk.

Business

Overview

We are a clinical-stage biotechnology company committed to applying our leading expertise in the field of oncolytic immunotherapy to transform the lives of cancer patients. We use our proprietary Immulytic platform to design and develop product candidates that are intended to maximally activate the immune system against cancer.

We are currently conducting a Phase 1/2 clinical trial with our lead product candidate, RP1, in approximately 150 patients with a range of solid tumors. We have entered into a collaboration with Bristol-Myers Squibb Company, or BMS, under which it has granted us a non-exclusive, royalty-free license to, and is supplying at no cost, its anti-PD-1 therapy, nivolumab, for use in combination with RP1 in this clinical trial. BMS has no further development-related obligations under this collaboration. The first part of this clinical trial is underway in the United Kingdom and we intend to conduct the second part of the clinical trial, which will enroll patients with four solid tumor types, in both the United Kingdom and, pending the opening of an Investigational New Drug Application, or IND, in the United States. We have also entered into a collaboration agreement with Regeneron Pharmaceuticals, Inc., or Regeneron, under which we intend to conduct clinical development of our product candidates in combination with cemiplimab, an anti-PD-1 therapy being developed by Regeneron. For each clinical trial conducted under this collaboration, Regeneron will fund one-half of the clinical trial costs, supply cemiplimab at no cost, and grant us a non-exclusive, royalty-free license to cemiplimab for use in the clinical trial. The first planned clinical trial to be conducted under this collaboration is a randomized controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with cutaneous squamous cell carcinoma, or CSCC, which we intend to initiate in the first half of 2019. If compelling clinical data are generated demonstrating the benefits of the combined treatment, we believe the data from this trial could support a filing with regulatory authorities for marketing approval. We also intend to initiate a clinical trial with our second product candidate, RP2, in additional tumor types in the first half of 2019.

Oncolytic immunotherapy is an emerging class of cancer treatment that exploits the ability of certain viruses to selectively replicate in and directly kill tumors, as well as induce a potent, patient-specific, anti-tumor immune response. Such oncolytic, or "cancer killing," viruses have the potential to generate an immune response targeted to an individual patient's particular set of tumor antigens, including neo-antigens that are uniquely present in tumors. Our product candidates incorporate multiple mechanisms of action into a practical, "off-the-shelf" approach, that is intended to maximize the immune response against a patient's cancer and to offer significant advantages over personalized vaccine approaches. We believe that the bundling of multiple approaches for the treatment of cancer into single therapies will simplify the development path of our product candidates, while also improving patient outcomes at a lower cost to the healthcare system than the use of multiple different drugs.

The foundation of our Immulytic platform consists of a proprietary, engineered strain of herpes simplex virus 1, or HSV-1, that has been "armed" with a fusogenic therapeutic protein intended to substantially increase anti-tumor activity. Our platform enables us to incorporate various genes whose expression is intended to augment the inherent properties of HSV-1 to both directly destroy tumor cells and induce an anti-tumor immune response.

We believe our lead product candidate, RP1, will be effective at killing tumors and inducing immunogenic, or immune-stimulating, tumor cell death and that it will be highly synergistic with immune checkpoint blockade therapies. In our ongoing Phase 1/2 clinical trial of RP1, we are conducting the first part of the

trial in the United Kingdom to evaluate safety in approximately 30 patients with a range of solid tumor types both alone and in combination with nivolumab, an anti-PD-1 therapy. No serious adverse events have been reported to date that have been determined to be related to RP1. In the second part of the trial, we will test RP1 in combination with nivolumab in four different tumor types in cohorts of approximately 30 patients each. These tumor types are metastatic melanoma, metastatic bladder cancer, microsatellite instability high cancer, and non-melanoma skin cancer, all of which we have chosen because they demonstrate a level of responsiveness to single-agent anti-PD-1 therapy but for which significant unmet medical need remains. In the second part of the trial, we intend to continue to evaluate the safety and tolerability of RP1 in combination with nivolumab. This part of the clinical trial will also evaluate efficacy under the clinical trial protocol, primarily on the basis of the proportion of patients who have a response within each tumor type cohort. Responses are either defined as a partial response (a 30% or greater reduction in tumor size) or a complete response (a complete eradication of the disease). We then intend to analyze each cohort's data to determine the indications that merit progressing into further clinical development.

In addition, we are preparing to initiate in the first half of 2019 a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with CSCC. If compelling clinical data are generated demonstrating the benefits of the combined treatment, we believe the data from this trial could support a filing with regulatory authorities for marketing approval.

We are also developing additional product candidates, including RP2 and RP3, built on our Immulytic platform, that are further engineered to enhance anti-tumor immune responses and to address additional tumor types. RP2 has been engineered to express an antibody-like molecule that blocks the activity of CTLA-4, a protein that inhibits the immune response to tumors. We are engineering RP3 with the intent not only to block the activity of CTLA-4, but also to further stimulate an anti-tumor response through activation of the immune co-stimulatory pathways. We intend to file INDs and foreign equivalents and, assuming regulatory clearance, expect that RP2 will enter clinical development in the first half of 2019, and that RP3 will enter clinical development in the first half of 2020.

Our product candidates are administered by direct injection into solid tumors. We believe that direct injection maximizes virus-mediated tumor cell death, provides the most efficient delivery of virus-encoded immune activating proteins into the tumor with the goal of activating systemic immunity, and limits the systemic toxicities that could be associated with intravenous administration. Activation of systemic immunity through local administration can lead to systemic clinical benefit through the induction of tumor responses in tumors which have not themselves been injected, which is known as an "abscopal" effect.

While products and product candidates based on the oncolytic immunotherapy approach have shown single-agent activity, we believe that our product candidates will demonstrate particular synergy in combination with immune checkpoint blockade therapies, including those that target the programmed cell death protein 1, or PD-1, a tumor cell surface receptor that plays an important role in inhibiting, or shutting down, immune responses, or the receptor or ligand for PD-1, called PD-L1. A pre-existing anti-tumor immune response and the presence of T cells within tumors are key predictors of the effective treatment of cancer with immune checkpoint blockade therapies. Because most patients do not have an ongoing pre-existing anti-tumor immune response, only a minority of patients respond to treatment with immune checkpoint blockade therapies alone. We believe that oncolytic immunotherapy treatments can initiate or enhance an immune response in patients with no or minimal pre-existing anti-cancer immunity and thereby increase the effectiveness of immune checkpoint blockade therapies. We believe that this is strongly supported by the results of a randomized, controlled Phase 1/2 clinical trial conducted by Amgen in melanoma patients, in which the combination of T-Vec with ipilimumab anti-CTLA-4 immune checkpoint

blockade therapy gave a response rate (meaning the observed measurement of the reduction in tumor size per the protocol) of 38% compared to 18% for ipilimumab therapy alone. While these results provide promising evidence of the activity of an existing oncolytic immunotherapy used in combination with checkpoint blockade therapies, we are designing our product candidates with additional mechanisms of action compared with T-Vec and other oncolytic immunotherapies in development, with the goal of maximizing both direct tumor killing and the activation of the patient's immune system against their particular cancer. We believe these additional mechanisms of action of our product candidates will increase tumor susceptibility to immune checkpoint blockade therapies and, in particular, work synergistically with antibodies targeting PD-1 or PD-L1 to enhance response rates across a range of tumor types.

Our team and investors

Our founders and core management team, including Robert Coffin, Ph.D., our President and Chief Executive Officer, Philip Astley-Sparke, our Executive Chairman, and Colin Love, Ph.D., our Chief Operating Officer, were the founder and senior management team of BioVex, where they developed T-Vec, the only oncolytic immunotherapy to receive FDA approval. BioVex was acquired by Amgen in 2011. Our Chief Medical Officer, Howard Kaufman, M.D., was the principal investigator for the pivotal study upon which T-Vec was approved and previously served as President of the Society for the Immunotherapy of Cancer. We are backed by a group of leading institutional life science investors, including affiliates of Atlas Ventures, Bain Capital Life Sciences, BVF Partners, Cormorant Capital, Forbion Capital Partners, Foresite Capital, Omega Funds and Redmile Group.

Our strategy

Our goal is to create the leading oncolytic immunotherapy company that discovers, develops and commercializes next-generation products with multiple mechanisms of action for the treatment of a broad range of solid tumor types. Key elements of our strategy include the following:

Advance the development of, and seek regulatory approval for, our lead product candidate, RP1. We are advancing two clinical trials for RP1. In the first half of 2019, we are planning to commence a randomized, controlled Phase 2 clinical trial of RP1 in combination with cemiplimab, versus cemiplimab alone, in approximately 240 patients with CSCC. We are designing this trial to potentially support product registration. In addition, we are currently conducting a Phase 1/2 clinical trial of RP1 targeting four different tumor types in cohorts of approximately 30 patients each. We then intend to analyze each cohort's data to determine the indications that merit further clinical development.

Initiate the clinical development of and obtain regulatory approval for RP2, our next product candidate. We have engineered RP2, which is based on RP1 but additionally expresses an anti-CTLA-4 antibody-like protein, to target tumor types that do not respond to single-agent immune checkpoint blockade therapies and patients who have not responded to or who have progressed on anti-PD-1/L1 therapy. We plan to initiate a Phase 1/2 clinical trial in the first half of 2019 of RP2 in combination with anti-PD-1 therapy in triple negative breast cancer and two further indications.

Leverage our Immulytic platform to build a portfolio of product candidates that target a range of immune mechanisms and progress these product candidates into the clinic. We plan to utilize our Immulytic platform to develop additional products, including RP3, that express further combinations of proteins aimed at activating multiple immune mechanisms for the treatment of a broad range of solid tumor types. Our current goal in the coming years is to introduce one product candidate into the clinic each year.

Apply our extensive expertise to establish, equip, and operate our own in-house manufacturing facility. We intend to establish, equip, and operate our own manufacturing facility in Framingham, Massachusetts for multi-product cGMP manufacturing. We expect our facility to be ready to produce clinical-grade material during the first half of 2020 and ultimately to be able to support commercial product launch.

Retain significant economic and commercial rights to our product candidates in key geographic areas. We intend to retain rights in the United States for our product candidates and to develop an oncology-focused commercial organization. When economically attractive, we intend to evaluate and enter into development and marketing agreements with pharmaceutical and biotechnology partners for geographic areas in which we are unlikely to pursue development and commercialization on our own.

Immuno-oncology background and limitations of existing therapies

Cancer is a broad group of diseases in which normal cells are transformed into a state of rapid and uncontrolled cell division, typically forming tumors. Cancer originates from a particular tissue in the body, such as the lung or skin, and often spreads, or metastasizes, as the disease progresses. Tumors are comprised of multiple cell types, including cancerous cells and immune cells. The composition and the type of tumor dictate the aggressiveness of a particular cancer, its susceptibility to treatment, and ultimately the outcome for the patient. A promising new approach to cancer treatment, which is the subject of significant ongoing drug development activity, is to activate the immune system against cancer.

The immune system contains many different cells types that fall into two general categories, cells of the innate immune system and cells of the adaptive immune system. The innate immune system is a first-line, ubiquitous, non-specific defense mechanism aimed at combating elements that the body views as foreign, particularly microbial pathogens and parasites, but also tumor cells. After the innate immune system is activated, an adaptive immune response is triggered that is specific to particular proteins, known as antigens. The adaptive immune system is flexible and can evolve. Importantly, it has the capacity for immune memory, or the ability to be recalled into action if the same foreign antigen is detected in the body in the future. Activation of both the innate and adaptive components of the immune system is believed to be essential for the induction of an effective anti-cancer immune response.

Immune checkpoints are key mechanisms of the adaptive immune system that function to inhibit immune responses and, in particular, to prevent the induction of autoimmunity. In the cancer setting, tumors can hijack these immune checkpoints such that the tumors become protected from the effects of anti-cancer immunity. This enables tumors to continue growing without or with reduced immune interference, even if an anti-tumor immune response had been initiated. Additional immune checkpoints inhibit the initial induction of an immune response, rather than subsequently protecting the tumor from a previously established immune response.

Checkpoint inhibitor therapies block these negative regulators of the immune system with the intent of either rendering tumors susceptible to immune attack and/or increasing the potency of the anti-tumor immune response that is generated. This approach to cancer therapy has the potential to result in long-lasting anti-cancer effects in certain patients with certain tumor types. To date, six immune checkpoint blockade products have been approved in a number of cancer indications, and there are numerous other related drug candidates in preclinical and clinical development. Market researchers forecast that immuno-oncology treatments will grow to over $25 billion a year in sales globally by 2022.

While immune checkpoint blockade has been a transformational treatment for many patients with cancer, the majority of patients do not currently respond to treatment. This is because checkpoint blockade

therapies targeting PD-1, PD-L1 or CTLA-4 require a pre-existing immune response to a patient's tumor and that the tumors be "inflamed," or "hot." Because many patients do not have an ongoing pre-existing anti-tumor immune response, which is often referred to as a tumor being immunologically "cold," only a minority of patients respond to checkpoint blockade therapies alone. We therefore believe that the ability to effectively convert "cold" tumors to "hot" would substantially increase the response rates and the types of tumors which are susceptible to immune checkpoint blockade.

Our approach — Oncolytic immunotherapy

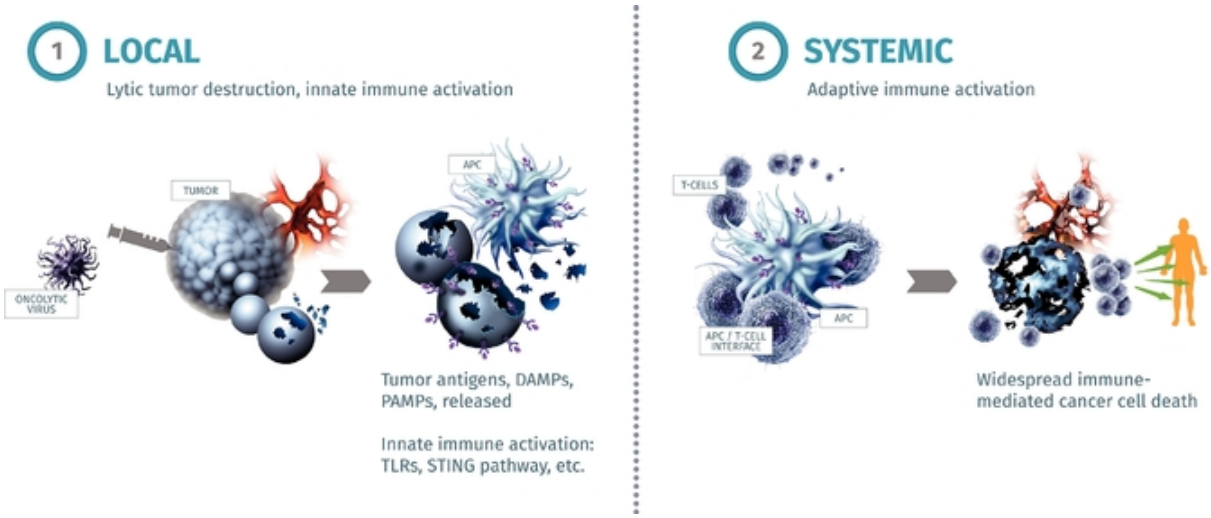
Our product candidates are designed to induce a robust immune response against a patient's cancer and turn immunologically "cold" tumors "hot." To achieve this objective, we use oncolytic immunotherapies that combine multiple mechanisms of action in a single product candidate. We believe our product candidates will initiate or enhance an immune response in patients with no or minimal pre-existing cancer immunity, including to tumor neo-antigens, and thereby increase the effectiveness of immune checkpoint blockade therapies.

Oncolytic immunotherapy is the treatment of cancer with viruses that selectively replicate in tumors, but not in normal tissue, thereby killing the virus-infected tumor cells. In addition to this direct oncolytic killing of cancer cells, the presence of the virus and the generation of immune-stimulating tumor cell death triggers both innate and adaptive immune responses that result in further tumor destruction, intended to result in the establishment of lasting antitumor immunity.

Our product candidates are intended to act at several key points in the pathways involved in the initiation of an immune response. Following direct injection into tumors, our viruses replicate in cancer cells and then lyse, or break them open, releasing tumor antigens, including neo-antigens specific to the patient, which could otherwise be hidden from the immune system. This process of necrotic cell death releases intra-cellular markers of "danger," the danger associated molecular patterns, or DAMPs, while the virus produces pathogen associated markers of danger, or PAMPs. These trigger various pathways of the innate immune system, including the STING pathway and pathways mediated through toll-like receptors, or TLRs, each resulting in the production of interferon. Innate immune activation would be expected to itself provide anti-tumor effects, as interferon activates natural killer cells which can destroy tumor cells. Innate immune activation also helps to trigger adaptive anti-cancer immunity, in which antigen presenting cells, or APCs, are attracted to the injected tumor. APCs internalize cancer antigens, including neo-antigens, and traffic back to the draining lymph nodes where they present the antigens to T cells. These are then primed to proliferate and disperse systemically to seek and destroy cancer cells with the same antigen profile throughout the body and destroy distant tumor deposits.

To further augment these intended effects, our oncolytic immunotherapies are intended to genetically encode and express multiple potent cell-killing and immune-stimulating proteins in the tumor—in other words, our oncolytic immunotherapies are "armed" with these therapeutic genes.

We believe our product candidates act at each of the key points needed to initiate a potent antitumor immune response, as shown in the diagram below.



We believe that our ability to incorporate multiple mechanisms of action into a practical, "off-the-shelf" approach to initiating or enhancing an anti-tumor immune response, including to neo-antigens, will offer significant advantages over the various approaches to immune activation that are currently in development, including personalized vaccine treatments. Tumor neo-antigens are uniquely present in tumors as compared to normal tissue because they result from the genetic changes that occur as cancer develops. Unlike the antigens present in normal tissue, the immune system sees neo-antigens as foreign. As a result, the immune system is able to mount an immune response to tumor neo-antigens in the same way that it would to the antigens contained in disease causing micro-organisms, which the immune system also sees as foreign. Researchers believe immune responses to tumor neo-antigens are particularly important in providing the patient's immune system the ability to combat cancer, and as a consequence various "personalized vaccine" approaches to generating immune responses to tumor neo-antigens are in development. These approaches are generally both expensive and time consuming because a vaccine cannot be designed and manufactured until a tumor biopsy is taken and analyzed in the laboratory to identify the mutated tumor antigens that will be targeted by the treatment. We believe that our approach may also offer significant advantages over other approaches to anti-cancer immune activation that only target a single pathway of the immune system, as is the case with most of the other immune-oncology therapies currently under development. Importantly, our product candidates are intended to act to maximally activate an immune response against cancer, the missing element needed to allow anti-PD-1 or anti-PD-L1 therapy to treat more patients and tumor types, unlike some other therapies such as those targeting indoleamine 2,3-dioxygenase, or IDO, which are intended to act by blocking additional defense mechanisms against an anti-tumor immune response once it has been initiated.

Our Immulytic platform

The foundation of our oncolytic immunotherapy product candidates, which we call our Immulytic platform, consists of a proprietary strain of HSV-1 that we have engineered to replicate selectively in tumors and to express a fusogenic glycoprotein, a protein that triggers the fusion of the membranes between cells. HSV-1 is both highly cell lytic and inflammatory, and also has a large carrying capacity, which makes it possible to incorporate multiple genes encoding therapeutic proteins. We believe our combination of HSV-1 with the

expression of the fusogenic glycoprotein increases the natural ability of HSV-1 to kill tumor cells and to induce an anti-tumor immune response. The fusogenic functionality of our product candidates is intended not only to increase the number of tumor cells that are killed, but also to cause highly immunogenic death of tumor cells. We believe that these factors will increase the potency of the systemic anti-tumor immune response that is generated by our product candidates. With the intention of amplifying the anti-tumor response further, we have also engineered our product candidates to express in tumors a range of additional, potent, immune activating genes encoding therapeutic proteins. Our lead product candidate, RP1, serves as the base for the development of these additional oncolytic immunotherapies expressing further therapeutic proteins. The development process and certain advantages of our Immulytic platform are summarized below:

Selecting the virus species and the virus strain

Although a number of viral species have been developed for oncolytic use, we believe HSV-1 is the most promising for the following reasons:

- HSV-1 can infect many different tumor cell types and, following infection, can destroy tumor cells through highly lytic virus replication;
- HSV-1 rarely produces severe illness in humans;
- The deletion of the genes encoding the HSV-1 ICP34.5 protein provides both tumor-selective virus replication and a well-characterized non-pathogenic phenotype;
- HSV-1 is a highly inflammatory virus, which we believe is beneficial for triggering both innate and adaptive immune responses;
- HSV-1 has a large genome, which has the packaging capacity to allow for the insertion of multiple genes expressing therapeutic proteins that are intended to enhance tumor cell killing and immune activation; and
- Effective anti-viral drugs are available for HSV-1, which could be used to block virus replication if needed.

In addition, HSV-1 has a proven track record in oncolytic immunotherapy, in particular with the approval by the FDA in 2015 of T-Vec for the treatment of unresectable advanced melanoma patients with injectable non-visceral tumors.

Different isolates, or "strains," of HSV-1 have differing properties, including with respect to the ability to infect and kill human tumor cells. Standard "laboratory" strains of HSV-1 may have reduced potency due to long-term culture in the laboratory or because such strains were not selected for the purposes of tumor killing. We believe that "clinical" strains, which are strains taken from individuals who suffer from cold sores, would not have become attenuated through long-term culture and, if selected on the basis of the ability to infect and kill human tumor cells, would provide higher potency than strains that have not been selected in this way.

Based on this rationale, we tested 29 clinical strains of HSV-1 isolated from 183 volunteers. Through this process we expected to sample a broad spectrum of the natural variation among clinical strains of HSV-1, including in relation to their ability to infect and kill human tumor cells. We observed a broad range of killing activity and chose the strain with the most promising overall properties for further development. Through this process we believe we have identified a highly potent strain of HSV-1 that provides a robust foundation for the development of our Immulytic platform.

To render the replication of the virus tumor-selective, we engineered this virus strain to delete the genes encoding the HSV-1 ICP34.5 and ICP47 proteins. This combination of deletions provides the virus with well-characterized non-pathogenic and tumor-selective properties.

To augment the underlying abilities of the virus both to kill tumor cells and to induce an anti-tumor immune response that may maximally activate the immune system against a patient's cancer, we have armed all of our product candidates with genes to express between two and four therapeutic proteins. These therapeutic proteins are expressed in the tumor as the virus replicates, and, as a result, may help to kill tumor cells and drive the initiation of an anti-tumor immune response in the tumor and draining lymph nodes. Once this anti-tumor immune response is initiated, the activated immune cells may also attack not only the injected tumors but also tumors that are distant from the injection sites.

Maximizing direct tumor killing — Expression of a fusogenic protein

To increase the natural ability of HSV-1 to directly kill tumors and to drive the immunogenicity of tumor cell death, we engineered our viruses to express a protein that causes cell-to-cell fusion intended to result in increased immune-stimulating cell death. Although there are various fusogenic proteins available for this purpose, we use the surface glycoprotein, or GP, from another virus, gibbon ape leukemia virus, or GALV, with a specific deletion of the R-peptide. The resulting protein is known as GALV-GP R(-). We believe that the higher levels of tumor antigens released through the expression of GALV-GP R(-), including tumor neo-antigens, combined with enhanced immunogenicity of cell death, increases both systemic immune-mediated anti-tumor effects and local, or injected, tumor destruction.

Enhancing the systemic anti-tumor immune response

With the aim of augmenting the potency of the anti-tumor immune response which is generated, we have also engineered our product candidates to express potent immune-stimulating proteins within tumors as replication occurs.

Expressing GM-CSF

RP1, our lead product candidate, expresses granulocyte-macrophage colony-stimulating factor, or GM-CSF, in addition to GALV-GP R(-). GM-CSF is a potent cytokine that activates and causes the proliferation of APCs and is, therefore, attractive for expression in the tumor to augment the anti-tumor immune response. Due to its ability to enhance immune responses, a number of other oncolytic immunotherapy products and product candidates in development have been designed to express GM-CSF. These include:

- T-Vec, approved in the United States, the European Union and elsewhere for the treatment of advanced melanoma;
- Pexa-Vec, in Phase 3 clinical development by SillaJen, Inc. for the treatment of hepatocellular carcinoma, or HCC; and
- CG0070, in development by Cold Genesys, Inc. for the treatment of bladder cancer.

Expressing additional immune-stimulating proteins

We have designed our further product candidates, RP2 and RP3, to express additional genes encoding therapeutic immune-stimulating proteins.

RP2 is a version of RP1 that includes a gene encoding an anti-CTLA-4 antibody-like protein. We believe that RP2 has the potential to offer advantages over current anti-CTLA-4 approaches, including ipilimumab, an anti-CTLA-4 therapy marketed by BMS. The FDA has approved ipilimumab for intravenous administration

for the treatment of advanced melanoma and has approved nivolumab, an anti-PD-1 therapy also marketed by BMS, for use in combination with ipilimumab, for advanced melanoma and renal cell carcinoma. Ipilimumab has also shown clinical synergy with GM-CSF. Intravenous administration of ipilimumab, however, causes significant toxicity, largely due to auto-immune side effects, particularly in combination with nivolumab. These autoimmune side effects from the systemic administration of ipilimumab appear to result from the blocking of the immune system's ability to recognize normal tissue and not attack it. Because the function of CTLA-4 is to inhibit the induction of immune responses, we believe that blockade of this effect should be needed only at the site where anti-tumor immune response induction occurs, namely at the tumor and the lymph nodes draining from the tumor site. We believe that RP2 will offer advantages compared with current CTLA-4 approaches, including ipilimumab. By expressing anti-CTLA-4 only locally in the tumor and draining lymph nodes, we believe that activity will be retained, but that toxicity will be reduced.

We are designing our RP3 product candidate to express not only GALV-GP R(-) and anti-CTLA-4, but also additional proteins that are intended to stimulate the potency of the anti-cancer T cell response through activation of the immune co-stimulatory pathways. We are studying the effects of incorporating the ligands for co-stimulatory proteins, including those known as CD40, OX40 and 4-1BB, for this purpose, and intend to finalize the version of RP3 that we will seek to progress into clinical development during the second half of 2018. We expect to introduce RP3 into clinical development in the first half of 2020. Currently, numerous antibodies are in clinical development by other companies that target these same pathways, but, as with CTLA-4, the site of action of these pathways is where the anti-tumor immune response is generated, so we believe that local intratumoral expression will be an advantageous approach.

We plan to develop product candidates beyond RP3 that will express additional genes encoding therapeutic proteins targeted at particular aspects of the anti-tumor immune response. As demonstrated by our planned development timelines, we believe that a particular advantage of our Immulytic platform is that it allows us to develop new product candidates containing genes encoding additional therapeutic proteins rapidly from conception through to the initiation of clinical trials. Our current goal in the coming years is to bring one product candidate into the clinic each year.

Synergy with immune checkpoint blockade therapies

While we believe our product candidates will be able to provide a clinical benefit as single agents, we believe their impact will be enhanced in combination with immune checkpoint blockade therapies. We currently intend for our product candidates to be used in combination with immune checkpoint blockade therapies, particularly antibodies targeting PD-1 or PD-L1. Based on a similar rationale and in support of this approach, a number of other oncolytic viruses have previously been tested in combination with immune checkpoint blockade therapies in clinical trials with promising results. In each of the completed single arm clinical trials, so far all in melanoma, a response rate that is higher than would be expected for the immune checkpoint blockade therapy alone has been observed, including a 62% response rate and 33% complete response rate having been seen with T-Vec combined with pembrolizumab. None of these clinical trials showed that oncolytic immunotherapy added significant additional toxicity relative to checkpoint blockade therapy alone.

There has been one randomized, controlled trial to date of an oncolytic immunotherapy combined with immune checkpoint blockade therapy. In that randomized Phase 2 clinical trial, T-Vec was tested in combination with ipilimumab compared to treatment with ipilimumab alone in 198 melanoma patients. The primary endpoint of the study was objective response rate. The combination of T-Vec and ipilimumab gave an objective response rate (meaning the observed measurement of the reduction in tumor size per the

protocol) of 38% compared to 18% with ipilimumab alone (p=.002), which was concluded to be statistically significant. No significant increase in toxicity was observed.

Later-stage clinical development is now underway with T-Vec in combination with pembrolizumab in the following clinical trials:

- A Phase 3 trial of T-Vec in combination with pembrolizumab, compared with pembrolizumab plus a placebo in patients with advanced melanoma; and

- A controlled Phase 2 trial of T-Vec in combination with pembrolizumab in patients with liver metastases from a variety of tumor types.

We believe that the early data, including randomized, controlled data described above, provides promising clinical support for oncolytic immunotherapy in combination with immune checkpoint blockade therapy.

Administration by direct injection into tumors

Our product candidates are injected directly into tumors. We can inject tumors close to the body's surface either visually or with simple ultrasound guidance, and can inject tumors found deeper in the body with imaging guidance techniques that are routinely used to take tumor biopsies. Direct injection is intended to maximize virus-mediated tumor cell death, which is required for the optimal activation of systemic immunity. In addition, we believe that direct injection provides the most efficient delivery of genes encoding therapeutic proteins into the tumor and thereby limits systemic exposure and related toxicities. We believe that only a limited number of injections of our product candidates will be required to initiate an immune response, particularly when combined with immune checkpoint blockade therapies such as those targeting PD-1 or PD-L1. By contrast, we believe that the systemic administration of oncolytic immunotherapy product candidates increases dilution in the blood, decreases tumor targeting, and increases the likelihood of an antiviral immune response, greatly reducing the ability of the virus to reach tumors.

Our product candidate pipeline

We are developing a pipeline of oncolytic immunotherapy product candidates that we believe have the potential to provide meaningful and long-lasting clinical benefits to cancer patients. The following table summarizes our current pipeline and expectations for development timelines:

Product candidate	Indication	Stage of development
RP1	Mixed advanced solid tumors	Phase 1 clinical trial of RP1 alone and in combination with nivolumab ongoing in the UK in approximately 30 patients (part of an approximately 150 patient Phase 1/2 clinical trial, with Phase 2 to initiate in H1 2019)
	Metastatic melanoma	To initiate four Phase 2 cohorts, approximately 30 patients per cohort, of the ongoing Phase 1/2 clinical trial testing RP1 in combination with nivolumab in H1 2019
	Metastatic bladder cancer	
	Microsatellite instability high cancer	
	Non-melanoma skin cancer	
	Cutaneous squamous cell carcinoma	To enter a Phase 2 controlled clinical trial testing RP1 in combination with cemiplimab vs cemiplimab alone in H1 2019, assuming the opening of an IND or foreign equivalent
RP2	Mixed advanced solid tumors	In preclinical development; to enter a Phase 1 clinical trial in H1 2019, assuming the opening of an IND or foreign equivalent
	Triple negative breast cancer[1]	To enter a Phase 2 clinical trial in H2 2019, assuming the opening of an IND or foreign equivalent
RP3	Anti-PD-1/L1 non-responsive tumors	In preclinical development; to enter a Phase 1 clinical trial in H1 2020, assuming the opening of an IND or foreign equivalent

(1) Two additional tumor types to be selected for Phase 2 clinical development, with clinical trials expected to commence in H2 2019, assuming in each case the opening of an IND or foreign equivalent.

We believe that our intended step-wise development approach from RP1 through RP3 reduces clinical risk, as we will be able to study the safety profile of each therapeutic protein prior to moving to the next product candidate with an additional therapeutic protein that is intended to provide more potent anti-tumor immune effects.

Lead product candidate: RP1

Our lead product candidate, RP1, is a selectively replicating version of HSV-1 that expresses GALV-GP R(-) and human GM-CSF. RP1 has the following properties:

- We have deleted the ICP34.5-encoding gene, which enables tumor-selective virus replication;
- We have deleted the ICP47-encoding gene, which is intended to prevent the inhibition of the antigen presentation pathway otherwise caused by ICP47 binding to the transporter associated with antigen presentation. ICP47 deletion is also intended to result in the increased and earlier expression of the HSV-1 US11 gene by placing the HSV-1 US11 gene under the control of ICP47 promoter. This increases virus replication in tumors without reducing tumor-selectivity; and

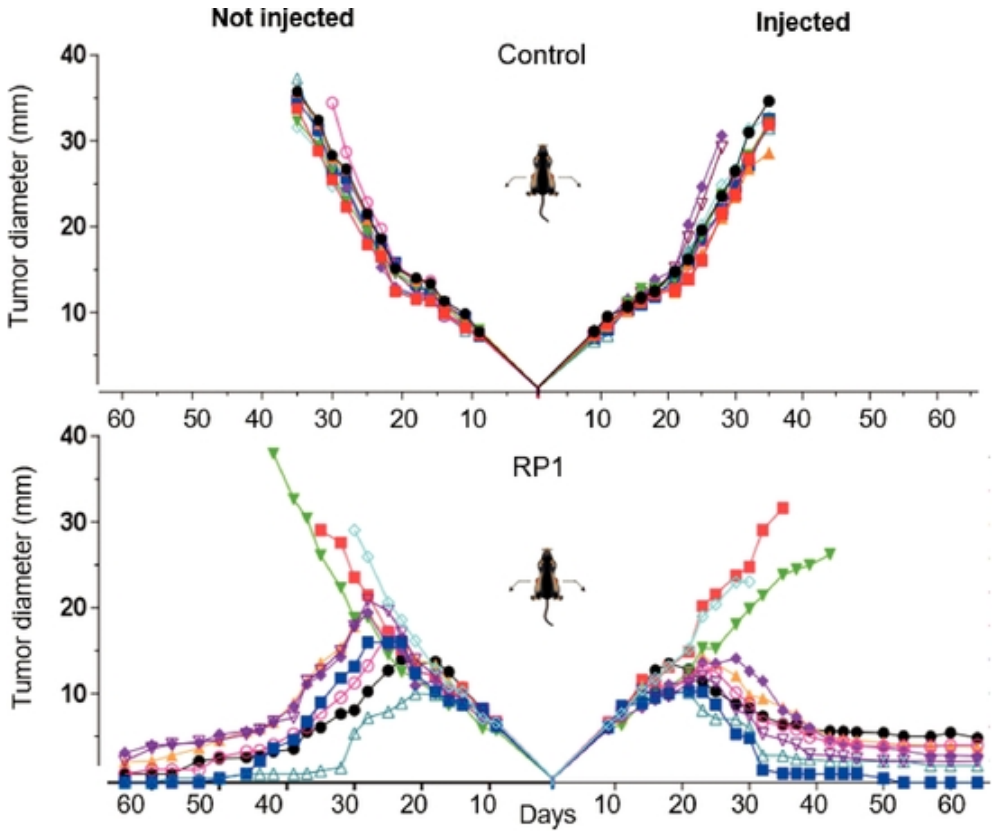
- We have inserted the sequences for GALV-GP R(-) and human GM-CSF, which results in the expression of these therapeutic proteins with the intention of increasing both the direct tumor cell killing and the potency of the anti-tumor immune response that is induced.

We are developing RP1 for use in combination with immune checkpoint blockade therapy, particularly therapies targeting PD-1 or PD-L1. We believe that the robust release of tumor antigens and the highly immunogenic tumor cell death intended to be caused by RP1 will further increase the synergy previously seen between oncolytic viruses and immune checkpoint blockade therapy.

Preclinical results

In one of our preclinical experiments, tumors were induced in both the left and right flanks of rats. RP1 was then injected into the tumors in only the right flanks. As shown below, where each line represents an individual tumor and lines of the same color represent the tumors in the left and right flanks of the same rat, we observed destruction not only of the injected tumors in the right flanks, but also of the large un-injected tumors in the left flanks of 70% of the treated rats. As reflected in the top diagram of Figure 1 below, when formulation buffer with no RP1 was injected into "control" rats, no impact on the growth of the injected or un-injected tumors was observed. This effect of RP1 in both injected and un-injected tumors provides support for the potent systemic, or "abscopal," effect of RP1.

Figure 1: RP1 has been shown to treat large injected and un-injected tumors in rats



Phase 1/2 clinical trial in multiple tumor types

We are conducting a Phase 1/2 clinical trial of RP1 in approximately 150 patients. The first part of our Phase 1/2 clinical trial is currently being conducted in the United Kingdom and we intend to conduct the

second part of the clinical trial in both the United Kingdom and, pending the opening of an IND, in the United States. This is an open-label, multicenter study to investigate the safety, tolerability and efficacy of RP1. We have designed this clinical trial to study RP1 in tumor types that have been shown to have some level of responsiveness to anti-PD-1 or anti-PD-L1 therapy but where we believe there remains significant unmet medical need. In the first part of the clinical trial we are assessing the safety and tolerability of RP1, administered alone in a single tumor, in a minimum of 18 patients with advanced or metastatic solid tumors who have progressed on or cannot tolerate standard therapy. Following the dose escalation phase, up to 12 patients will be enrolled to receive RP1 administered into multiple tumors in combination with nivolumab. In the second part of the clinical trial, we will study the safety and efficacy of RP1 in combination with nivolumab in specific tumor types in four cohorts of approximately 30 patients each. These tumor types are metastatic melanoma, metastatic bladder cancer, microsatellite instability high cancer, and non-melanoma skin cancer. Depending on the tumor type, patients must be eligible to receive PD-1 directed therapy according to the product label or have exhausted, become intolerant to or refused currently available therapies. We have an agreement with BMS for the supply of nivolumab for this clinical trial.

We expect that the results from the first part of the clinical trial will help us determine the safety, tolerability and intended dose of RP1 for further development and to provide initial safety data for RP1 in combination with nivolumab. We have also designed the first part of the trial to provide insights on the effects of RP1 on tumors, including necrosis, inflammation and erythema, the biodistribution of RP1 in the blood, saliva and mucosa, and the impact of RP1 administration on anti-HSV-1 antibody responses. For the patients in the first part of the trial who also receive nivolumab, we will assess certain biomarkers indicative of immune activation in tumor biopsies. These include the infiltration of T cells, expression of PD-L1, and the presence of an "inflamed gene signature," each of which would indicate ongoing immune activation.

Of the approximately 30 patients in the first part of the clinical trial:

- Approximately half will receive RP1 using direct or ultrasound guided injection to administer RP1 to tumors located on or close to the skin, or into lymph nodes located near the skin; and

- Approximately half will receive RP1 using imaging guided injection to administer RP1 to tumors located deeper in the body, including in visceral organs such as the liver.

In the second part of the trial, we intend to continue to assess the safety and begin to assess the efficacy of RP1 in combination with nivolumab in four cohorts of approximately 30 patients, each with one of the different cancer types described above.

We have chosen these tumor types because they have shown that they have some level of underlying responsiveness to treatment with immune checkpoint blockade therapies but for which we believe considerable unmet medical need remains. We intend to expand the number of patients treated and/or add a control arm for each cohort where we see promising signs of efficacy, either as part of the same clinical trial or as separate trials, as a means to gather more definitive data in support of the clinical benefit of the combination of RP1 and nivolumab in these respective tumor types. We believe that the expanded clinical trials can be designed to support a filing with regulatory authorities for marketing approval.

In each of the four cohorts in the second part of the trial, we plan to assess efficacy under the clinical trial protocol by examining the rate and duration of responses, including partial responses (a 30% or greater reduction in tumor size) and complete responses (a complete eradication of the disease), as well as examining biomarkers of immune response and mechanism of action. For example, we expect that tumors

with no or low pre-existing immune responses as evidenced by no or low T cell infiltration at baseline would not respond to anti-PD-1 therapy. Responses in these patients would therefore suggest clinical benefit of the combination of RP1 with anti-PD-1. Likewise, an increase in post-treatment T cells infiltrating into tumors and/or an increase in inflammation as evidenced by the development of an inflammatory gene signature would also support the activity of RP1.

Clinical trial status

The first part of the ongoing Phase 1/2 clinical trial of RP1 commenced in October 2017 in the United Kingdom where 16 patients have been enrolled to date, including patients with melanoma, breast cancer, colorectal cancer, CSCC and esophageal cancer. Each of these patients has advanced, high tumor burden disease and has previously failed multiple other therapies including in clinical trials. Approximately half of the patients have received one or more lines of immune checkpoint blockade therapy. As of July 9, 2018, we have administered injections into a single tumor at first doses of $1x10^4$, $1x10^5$ and $1x10^6$ pfu/ml by direct injection and first doses of $1x10^4$ and $1x10^5$ pfu/ml by imaging guided injection into deeper lesions. Subsequent doses for direct injection have been given at up to $1x10^8$ pfu/ml and for deeper lesions at up to $1x10^6$ pfu/ml so far. Injections have been given up to five times in each patient. During screening and in the weeks following the injections, we have taken swabs of the tumor, biopsies, blood samples, urine samples, vital signs, photographs at various intervals and CT scans are specified at 30 days following the final dose of RP1.

The primary objectives of the first part of the trial are to provide an initial determination of the safety of RP1 alone and in combination with nivolumab and to determine the recommended dose for the second part of the trial. In addition, we intend to assess tumor size, erythema and inflammation in tumor biopsies for indications of biological activity.

The clinical trial is being conducted under the review of a safety review committee, which is responsible for reviewing safety data, deciding whether to move to the next dose cohort, determining the recommended Phase 2 dose, and identifying any safety concerns. The clinical trial is also subject to certain protocol defined safety stopping rules.

Preliminary data as of July 9, 2018 suggest that RP1 is well tolerated. We have observed the expected side effects of local inflammation and erythema combined with mild fevers and other influenza-like symptoms for several days. These side effects are consistent with the side effects previously reported for other oncolytic viruses. Although serious adverse events, or SAEs, have been observed in three of the 16 patients enrolled in the first part of our ongoing Phase 1/2 clinical trial of RP1 to date, these SAEs were determined to be related to the patients' underlying advanced cancer and not to treatment with RP1. No SAEs have been observed which were concluded to be related to RP1. One possible dose limiting toxicity, or DLT, elevated lipase levels, which did not meet the definition of an SAE, has been observed in one patient in the first deep visceral group cohort. At baseline, this patient was HSV seropositive and already had rising lipase levels. The patient received prior doses of $1x10^4$ pfu/ml and $1x10^5$ pfu/ml with the elevated lipase levels occurring after the patient's third dose, which was at a dose level of $1x10^6$ pfu/ml. The elevated lipase levels then resolved without clinical signs or symptoms being observed and following which two further doses of $1x10^6$ pfu/ml were given with no other potential DLTs occurring. The other two patients in that cohort, who were both HSV seronegative, and the first patient in the next dose level cohort in the deep visceral group, who was HSV seropositive and given doses of $1x10^5$, $1x10^6$ and three doses of $1x10^7$ pfu/ml, have not experienced any DLTs. However, per protocol, because a potential DLT was observed in the first dose level cohort following review of laboratory values during trial monitoring, this first dose level cohort in the deep visceral group is being expanded to include an additional three patients. As of July 9, 2018, two of these patients have been enrolled, with the first patient having received doses of $1x10^4$, $1x10^5$

and two doses of $1x10^6$ pfu/ml so far, and the second patient having received a single dose of $1x10^4$ pfu/ml, with no potential DLTs having been observed. While the first part of the clinical trial is being conducted in the United Kingdom, we intend to conduct the second part of the clinical trial in both the United Kingdom and, pending an opening of an IND, the United States. We may also consider additional countries for this clinical trial. We expect that data from the first part of our Phase 1/2 clinical trial of RP1 will be available in the first half of 2019.

Regulatory status

In the United Kingdom, prior to filing a Clinical Trial Authorization, or CTA, we participated in a pre-CTA meeting with the Medicines and Healthcare products Regulatory Agency, or MHRA, in February 2017. We subsequently filed our CTA with the MHRA in April 2017 and received full CTA approval from the MHRA in July 2017. In June 2018, the MHRA approved an amendment to the trial protocol to specify, among other things, that the anti-PD-1 therapy to be used is nivolumab, to specify that anti-PD-1 therapy will be included in the Phase 1 expansion cohort and to add nivolumab-specific information to the protocol.

In the United States, we participated in a pre-IND teleconference with the FDA in October 2017, during which the agency asked that we repeat one of the toxicology and biodistribution studies we previously conducted but with a longer follow-up than was used in the initial study. We filed an IND on February 23, 2018, to enable the FDA to review all other aspects of the IND, which we will update once the additional toxicology and biodistribution data are available. The FDA verbally informed us on March 23, 2018 and confirmed in writing on April 18, 2018 that, as expected, the IND was on clinical hold pending submission of the additional data and review by the FDA. The in-life phase of the toxicology and biodistribution study was completed in May 2018, and no material issues were observed. We received an unaudited toxicology report from the CRO in July 2018, and intend to submit an amendment to the IND to the FDA in early August 2018.

Controlled Phase 2 clinical trial in CSCC

In the first half of 2019, we intend to initiate a randomized, controlled Phase 2 clinical trial of RP1 combined with cemiplimab, compared to cemiplimab alone, in approximately 240 patients with CSCC. The primary objective of this controlled Phase 2 clinical trial will be to assess the response rate of the combination therapy compared to treatment with anti-PD-1 therapy alone, with key secondary endpoints including the rate of complete response and the duration of response. If compelling clinical data are generated demonstrating the benefits of the combined treatment, we believe the data from the controlled Phase 2 clinical trial could support a filing with regulatory authorities for marketing approval.

Pipeline product candidate: RP2

We have designed our RP2 product candidate to express an anti-CTLA-4 antibody-like protein in order to block the inhibition of the immune response otherwise caused by CTLA-4. We believe that RP2 will offer advantages compared with current CTLA-4 approaches, including ipilimumab. By expressing anti-CTLA-4 only locally in the tumor and draining lymph nodes, we believe that activity will be retained, but that toxicity will be reduced. We intend that our RP2 product candidate will be used in combination with anti-PD-1 therapy, which we believe will result in both synergy with the oncolytic virus and the expression of the anti-CTLA-4 in the tumor.

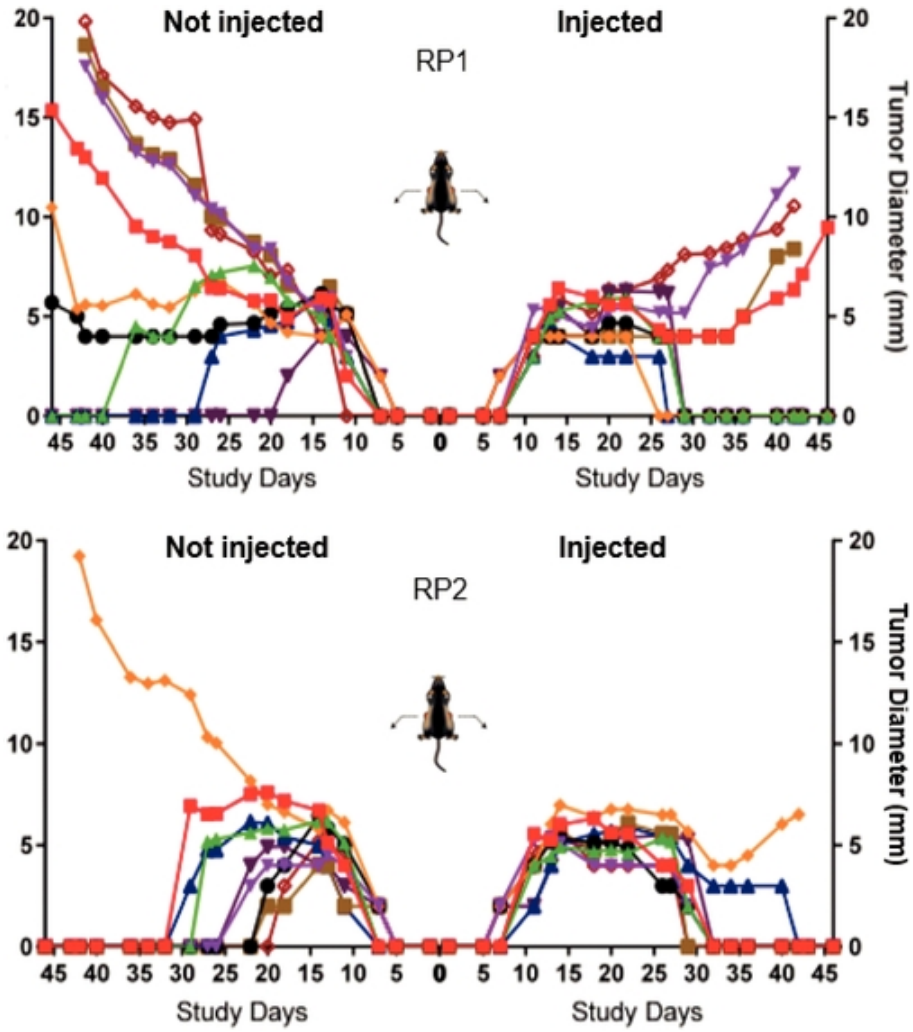
We intend to administer RP2 in combination with anti-PD-1 or anti-PD-L1 therapy in tumor types that are not responsive to anti-PD-1/L1 therapy alone, and in patients who have not responded to or who have progressed on prior anti-PD-1/L1 therapy. We expect to include patients with triple negative breast cancer and two further indications in our initial clinical trial with RP2. We intend to file an IND and foreign equivalents for RP2 and we expect that we will bring RP2 into clinical development in the first half of 2019.

Preclinical results

We are currently conducting preclinical development of RP2, including toxicology and biodistribution studies, with product already manufactured to GMP standards. Release testing is underway.

We have conducted preclinical tests comparing RP1 and RP2 to determine the effect of expressing the anti-CTLA-4 antibody-like protein, and have observed an enhanced effect with RP2. In one of these preclinical experiments, tumors were induced in both the left and right flanks of mice. Either RP1 or RP2 was then injected into the tumors in only the right flanks. As shown below in Figure 2, where each line represents an individual tumor and lines of the same color represent the tumors in the left and right flanks of the same mouse, we observed enhanced destruction of tumors with RP2 as compared to RP1, particularly of the un-injected tumors. In this experiment only a low dose of virus was used such that with RP1 un-injected tumors only partially responded to the treatment. This was to allow the potential benefits of anti-CTLA-4 expression to be observed. This experiment is illustrated in the figure below:

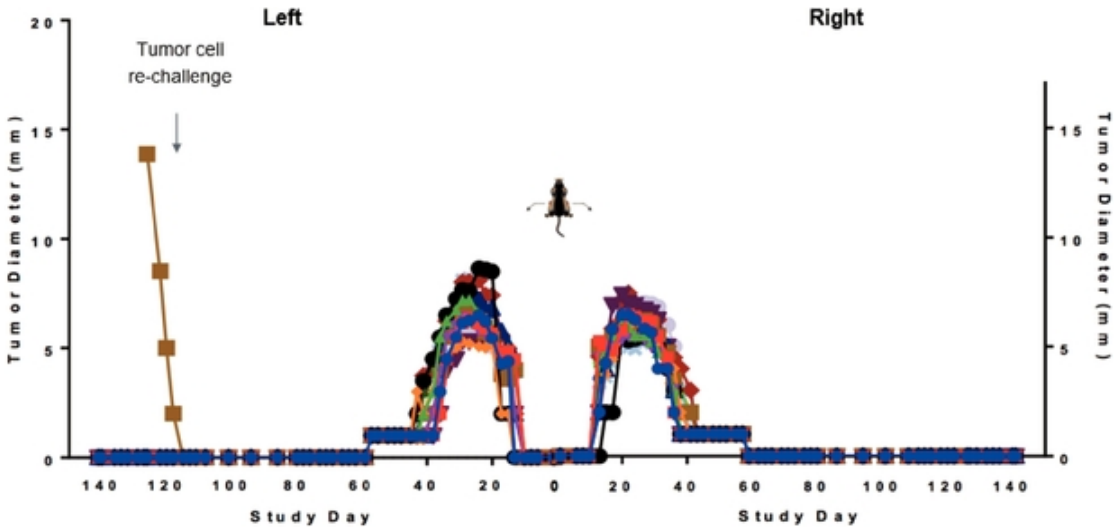
Figure 2: Expression of anti-CTLA-4 from RP2 showed an increased effect as compared to RP1 in mice



In a further experiment with RP2 in combination with anti-PD-1 therapy, we assessed the durability of response in mice in which tumors had been eradicated and whether these mice were protected against

re-challenge with tumor cells, which would demonstrate that memory immune responses had been induced. In this experiment 15 mice cured of bilateral tumors following administration of RP2 combined with an anti-PD-1 therapy were observed until day 108 following initiation of the experiment and then re-challenged with tumor cells to assess whether the mice were protected against the formation of new tumors. This demonstrated that anti-tumor effects were maintained throughout the experiment and that 14 out of the 15 mice were protected against re-challenge with tumor cells. This experiment is shown in the figure below. Treatment with anti-PD-1 alone has no anti-tumor effect in this model.

Figure 3: The treatment effect with RP2 was shown to be durable and induce memory immune responses in mice



Planned Phase 1/2 clinical trial

We are currently beginning protocol development for a Phase 1/2 clinical trial of RP2 in combination with anti-PD-1 therapy and intend to initiate the clinical trial in the first half of 2019.

Pipeline product candidate: RP3

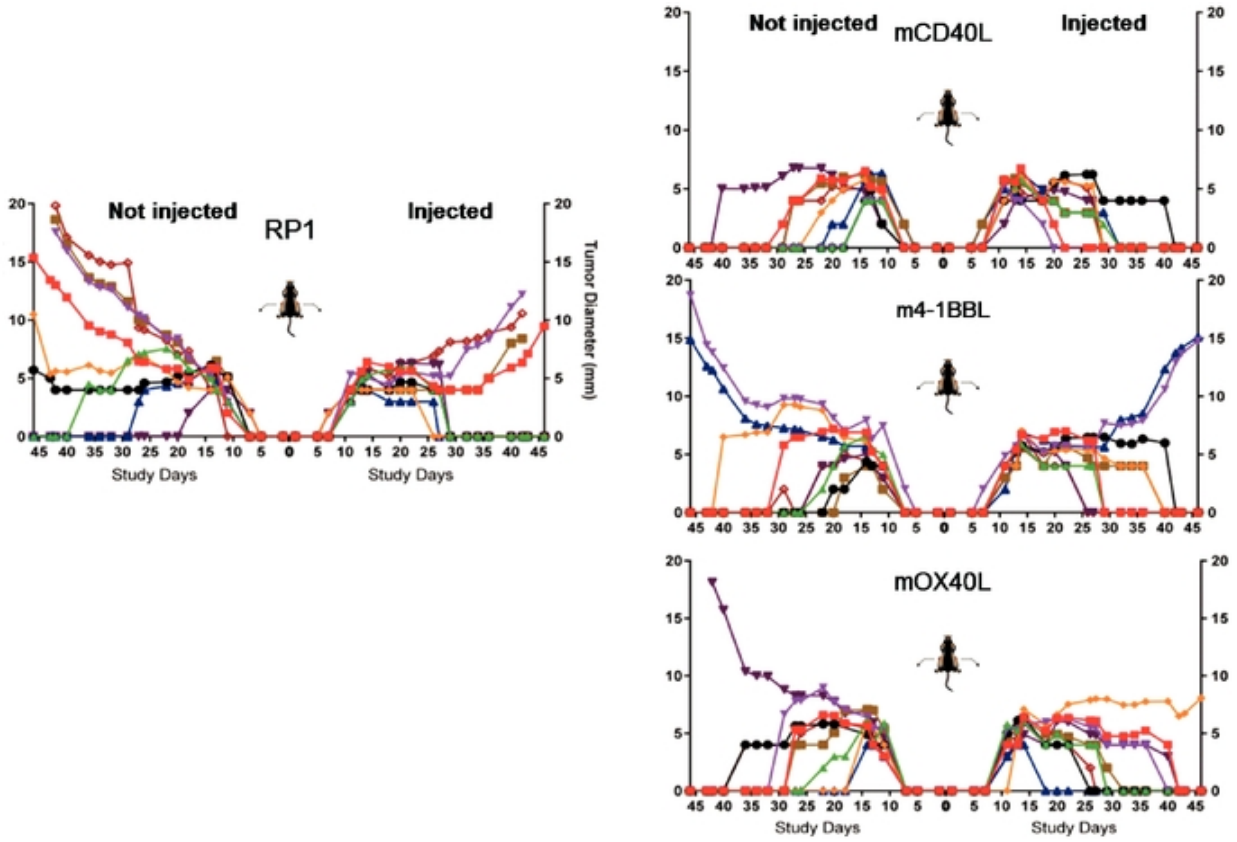
We are designing our RP3 product candidate to express immune-activating proteins that stimulate T cells, in addition to anti-CTLA-4 and GALV-GP R(-). These immune activating proteins are the ligands for various immune co-stimulatory pathways responsible for T cell proliferation and/or activation, including the CD40, OX40 and 4-1BB pathways. We plan to finalize the version of RP3 for clinical development during 2018. As with RP2, we intend to study RP3 in indications that have not so far responded to anti-PD-1 or anti-PD-L1 therapy. We expect to bring RP3 into clinical development in the first half of 2020.

Preclinical results

We have conducted preclinical tests to assess the benefit of expressing immune co-stimulatory pathway ligands, and have observed an enhanced effect associated with the expression of these proteins as compared to RP1. In one of these preclinical experiments, tumors were induced in both the left and right flanks of mice. Either RP1 or versions of RP1 additionally expressing the ligands which activate CD40, 4-1BB or OX40 were then injected into the tumors in only the right flanks. As shown below, where each line represents an individual tumor and lines of the same color represent the tumors in the left and right flanks of the same mouse, we observed enhanced destruction of tumors with the co-stimulatory pathway ligand expressing viruses as compared to RP1, particularly of the un-injected tumors. In this experiment

only a low dose of virus was used such that with RP1 un-injected tumors only partially responded to the treatment. This was to allow the potential benefits of co-stimulatory pathway ligand expression to be observed. This experiment is illustrated in the figure below:

Figure 4: Comparative effects of RP1 and equivalent viruses also expressing immune co-stimulatory pathway ligands in mice



Background on our target indications and current treatment options

Set forth below is a description of the target indications we currently intend to pursue with RP1 or RP2, as well as a summary of the existing treatment options for each target indication. When we refer to "response rates" below, we mean the observed reduction in tumor size, per the criteria set forth in the applicable clinical trial protocol; and when we refer to "complete response rate" below, we mean the observed complete eradication of disease in the patient.

Bladder cancer

According to the American Cancer Society, bladder cancer has an incidence of approximately 81,190 cases annually in the United States, with 17,240 deaths attributable to the disease in 2018. Although 77% of bladder cancer patients survive five years from diagnosis, the five-year relative survival rate for metastatic stage IV bladder cancer is just 15%.

Treatment depends on the stage of disease and may include some combination of surgery, radiation therapy, chemotherapy and immunotherapy. Surgical options may include transurethral resection, partial or complete removal of the bladder, or urinary diversion. Platinum-based chemotherapy is the standard of

care for patients with metastatic disease. Several regimens exist, though the combined treatment of methotrexate, vinblastine, doxorubicin, and cisplatin has been the preferred one; however, patients experience high toxicity associated with these therapies. Patients who relapsed after platinum-based therapy have median survival ranging from five to seven months and no known life-prolonging treatments exist. Immune checkpoint blockade therapies have since shown utility in recurrent advanced bladder cancer. Specifically, pembrolizumab, atezolizumab, avelumab and durvalumab have all been approved in various settings. Pembrolizumab received FDA accelerated approval for first-line use based on a study of 370 patients with locally advanced or metastatic urothelial carcinoma who were not eligible for platinum-containing chemotherapy. The response rate was 29% with a 7% complete response rate. Pembrolizumab is also FDA-approved for patients who have failed platinum-containing chemotherapy based on a 542 patient randomized, controlled clinical trial of pembrolizumab compared to chemotherapy. The response rate was 21% for pembrolizumab compared to 11% for chemotherapy, with complete response rates of 7% and 3%, respectively, and a 27% reduction in the risk of death observed.

Atezolizumab, a PD-L1 inhibitor, has also been found to be active in bladder cancer, and was granted accelerated approval by the FDA in 2016 for patients with locally advanced or metastatic urothelial carcinoma, who progressed on or after platinum-based chemotherapy on the basis of a 310 patient single arm study. Atezolizumab gave a response rate of 14.8% for all patients, a 9.5% response rate for patients with low PD-L1 expression, and a 26% response rate for patients with high PD-L1 expression. Complete response rates were 5.5%, 2.4%, and 12%, respectively. Avelumab and durvalumab, additional antibodies targeting PD-L1, were also granted accelerated approval by the FDA for the treatment of locally advanced and metastatic bladder cancer in May 2017. Avelumab is approved for patients with advanced or metastatic bladder cancer who have disease progression on or following platinum-containing chemotherapy and for patients having disease progression within 12 months of pre- or post-surgery platinum-containing chemotherapy on the basis of a 242 patient single arm clinical trial. The response rate was 13.3% after 13 or more weeks of follow up and 16.1% after six months or more of follow up, with complete response rates of 4% and 5.6%, respectively. There was no clear difference in response rate based on PD-L1 expression. Durvalumab is approved in the same patients on the basis of a single arm 182 patient clinical trial which gave a 17% response rate for all patients, a 26.3% response rate for patients with high PD-L1 expression, and a 4.1% response rate for patients with low PD-L1 expression. Complete response rates were 2.7%, 3.2%, and 1.4%, respectively.

Melanoma

According to the American Cancer Society, melanoma has an incidence of approximately 87,000 cases annually in the United States with over 9,300 deaths attributable to the disease in 2018. For patients with metastatic melanoma, five-year survival rates have historically been very low. While the majority of patients have clinically localized disease at presentation, advanced melanoma spreads in an unpredictable fashion, with widespread metastasis to any organ site but often to skin, lung, brain, liver, or small bowel. Since most cases of melanoma are diagnosed at an early stage and are curable with surgery alone, the standard treatment option for Stage I to resectable Stage III disease is surgery with or without lymph node dissection. For more advanced stages, until recently, treatment options were limited to chemotherapy, which is of unproven benefit, and Interleukin 2, or IL-2. IL-2 was approved by the FDA in 1998 on the basis of a 270 patient single arm study which demonstrated a 16% response rate and 6% complete response rate. While responses with IL-2 are often of long duration, toxicity is often substantial.

Since 2011, the immunotherapies ipilimumab, pembrolizumab, nivolumab, ipilimumab in combination with nivolumab, and T-Vec have received FDA approval in the United States, as have the molecular targeted therapies vemurafenib and dabrafenib in combination with trametinib. While response rates are often high,

they are also often of limited duration. The more recently approved immunotherapy products have generally been shown to give responses of longer duration.

Ipilimumab was approved on the basis of a 676 patient randomized, controlled trial comparing ipilimumab to a peptide vaccine. The response rate for ipilimumab was 10.9% compared to 1.5% for the peptide vaccine and the risk of death was reduced by 34%.

Pembrolizumab was approved in ipilimumab naïve patients on the basis of an 834 patient randomized, controlled Phase 3 clinical trial testing two dose regimens (every two weeks and every three weeks) of pembrolizumab versus ipilimumab. The response rates for pembrolizumab were 34% and 33%, respectively, and 12% for ipilimumab. The complete response rates were 5%, 6%, and 1%, respectively. This data included patients with both previously treated and previously untreated disease. In a separate trial, the complete response rate in previously untreated melanoma with pembrolizumab was 14% and for all patients, both previously treated and previously untreated, the complete response rate was 8%. The risk of death was reduced by 37% and 31% for pembrolizumab dosing every two weeks and every three weeks, respectively, as compared to treatment with ipilimumab. Pembrolizumab is also approved for ipilimumab refractory patients on the basis of a 540 patient Phase 3 clinical trial comparing the same two dosing regimens of pembrolizumab compared to chemotherapy. Response rates of 21% and 25% for pembrolizumab compared to 4% for chemotherapy and a 14% and 26% reduction in the risk of death, depending on the pembrolizumab dose, were observed. The complete response rate was 2% and 3% for pembrolizumab and 0% for chemotherapy.

Nivolumab was approved in patients with previously treated melanoma on the basis of a 120 patient clinical trial in which a response rate of 32% and a complete response rate of 3.3% was observed in patients treated with nivolumab. Nivolumab was also approved for previously untreated melanoma on the basis of a 418 patient clinical trial comparing nivolumab to chemotherapy in which response rates of 34% for nivolumab and 9% for chemotherapy were observed, with complete response rates of 4% for nivolumab and 1% for chemotherapy and a reduction in risk of death of 58% for nivolumab. Nivolumab was also approved in melanoma in combination with ipilimumab based on a 945 patient clinical trial in which ipilimumab naïve patients were treated with nivolumab alone, ipilimumab alone, or nivolumab together with ipilimumab. While toxicity in the combination arm of the trial was substantially increased as compared to the single agent treated patients, the response rate was 50% for the combination compared to 40% for nivolumab alone and 14% for ipilimumab alone, with complete response rates of 8.9%, 8.5% and 1.9%, respectively. There was also a reduction in the risk of death of 58% as compared to ipilimumab for the combination arm and of 43% for nivolumab compared to ipilimumab alone.

In 2015, T-Vec was approved for the local treatment of unresectable cutaneous, subcutaneous, and nodal lesions in patients with recurrent melanoma after initial surgery on the basis of a 436 patient Phase 3 clinical trial in which patients with previously treated or treatment naïve Stage IIIb to Stage IVM1c disease were randomized, two-to-one, to receive either T-Vec or subcutaneously administered GM-CSF. The primary endpoint was durable response rate, or DRR, the rate of responses lasting continuously for at least six months. The DRR was 16.3% for T-Vec compared to 2.1% for GM-CSF, the overall response rate was 26.4% for T-Vec compared to 5.7% for GM-CSF, and the complete response rate was 16.9% for T-Vec compared to 0.7% for GM-CSF. In combination with ipilimumab, in a 198 patient controlled Phase 2 clinical trial, T-Vec gave a response rate of 39%, compared to 18% for ipilimumab alone. In combination with pembrolizumab, T-VEC gave a response rate of 62% and complete response rate of 33% in a 21 patient Phase 1b clinical trial.

Non-melanoma skin cancer

Non-melanoma skin cancer, or NMSC, is the most common cancer affecting light-skinned individuals and the incidence is increasing worldwide. Although incidence varies by geography, about 80% of all NMSC cases are basal cell carcinoma, or BCC, while CSCC represents about 20%, and other cancer types represent only 1%. Included in that 1% are primary cutaneous lymphoma, sarcomas of the skin, Merkel cell carcinoma, and appendageal carcinoma. NMSC is often not reported to cancer registries, hence accurate estimates of incidence are difficult to obtain. In 2013, the World Health Organization estimated there to be 2-3 million cases per year. NMSCs, however, are most likely to be under-reported, particularly in light of a recent study that estimated there to be 3.5 million cases each year in the United States alone.

Cutaneous squamous cell carcinoma

According to the American Cancer Society, CSCC has an incidence of more than 700,000 cases annually in the United States, with approximately 4,000-9,000 deaths attributable to the disease each year, and is the second deadliest skin cancer after melanoma. Although the prognosis for patients with CSCC is generally favorable, if distant metastases occurs, the long-term prognosis is extremely poor. Most cases of CSCC can be successfully managed with a variety of simple procedures, such as cryotherapy, curettage and electro desiccation, topical treatments, or simple surgical excision. When lesions are more advanced, micrographic surgery, more extensive surgical resection, or radiation therapy are generally sufficient to control loco-regional disease. The five-year rate of cure in patients with large tumors is 70%, regardless of the treatment chosen. However, for those with metastatic disease, the long-term prognosis is reduced drastically.

Stage IV CSCC can be responsive to various chemotherapeutic agents. However, there are no standard or FDA-approved therapies. Targets being evaluated in clinical trials of CSCC include epidermal growth factor receptor inhibition with drugs such as cetuximab or erlotinib, as well as PD-1 inhibition with drugs such as cemiplimab. Cemiplimab is currently under review for approval in CSCC by the FDA based on data generated in a Phase 2 clinical trial of 82 patients with advanced CSCC in which cemiplimab demonstrated an overall response rate of 46.3%, together with data from a previous Phase 1 clinical trial in 26 patients which gave a 46.2% response rate and a compete response rate of 7.7%.

Basal cell cancer of the skin

Annual rates of basal cell cancer of the skin, or BCC, in the United States have been estimated at up to 485 and up to 253 cases of BCC per 100,000 males and females, respectively. Local treatment measures fail to control disease in 10% of patients, although metastatic disease is rare.

The most frequent site of metastatic involvement is the regional lymph node in 68% of cases. Dissemination through the blood may also occur, affecting the lungs and pleura, liver, and bones. The use of systemic therapy is limited to patients with distant metastases or locally advanced disease that is not suitable for surgery or radiation. In the cases of locally advanced or metastatic disease, systemic therapy with FDA-approved hedgehog pathway inhibitors is recommended. Typical outcomes with this approach include a 43% response rate, with a 7.6 month response duration, and a 30% response rate, with a 7.6 month duration, for locally advanced and metastatic disease, respectively, after which there is no approved therapy. Other drugs, including those targeting PD-1 and PI3K, are being studied in clinical trials.

Merkel cell carcinoma

Merkel cell carcinoma, or MCC, is a rare neuroendocrine malignancy of the skin predominately affecting elderly, light-skinned individuals and may also occur earlier and more frequently in immunosuppressed patients. The incidence of MCC is very low when compared to other cutaneous malignancies, with an

estimated 1,500 cases diagnosed annually in the United States. The typical clinical course of the disease is rapid progression of the primary tumor with early and frequent metastasis to the regional lymph nodes. In unresectable or metastatic MCC, chemotherapy achieves high remission rates. However, responses are usually short lived. In March 2017, avelumab, an anti-PD-L1 monoclonal antibody, was approved in the United States for patients with advanced MCC based upon a single-arm, open-label, Phase 2 clinical trial in 88 metastatic MCC patients who had failed at least one prior chemotherapy treatment. The response rate was 33% with a complete response rate of 11.4%.

Other rare non-melanoma skin cancers

There are many other types of rare skin malignancies that occur. As a group, these tumors are often highly aggressive and initially treated by surgical resection with or without local radiation therapy. Once these tumors recur locally or develop metastases, outcomes are usually poor and no effective systemic therapy is available. These rare tumors include dermatofibroma protuberans, angiosarcoma of the skin, non-HIV-related Kaposi's sarcoma, sebaceous cell carcinoma, and eccrine carcinoma.

Microsatellite instability high or mismatch repair deficient tumors

Microsatellite instability high, or MSI-H, or mismatch repair deficient, or dMMR, tumors are characterized by defects in DNA replication, particularly in the microsatellite regions. Typically, the nucleotide mismatches that occur during DNA replication are corrected by a proofreading system to correct these errors. Microsatellite instability describes the predisposition for mutations in the tandem repeat sequences due to uncorrected base insertion or deletion errors.

Although most microsatellites are located in noncoding regions of the genome, ill-placed uncorrected DNA replication errors can cause mutations within protein coding sequences, often resulting in the expression of functionally inactive mutant proteins that interfere with normal cell regulation and help to drive cancer. The number of mutation-associated neo-antigens resulting from mismatch-repair deficiency is more than 20 times higher than in tumors without this deficiency. The tumor microenvironment of dMMR tumors strongly expresses PD-L1, which indicates that an active response to the neo-antigens is underway.

The presence of MSI-H and dMMR tumors has been reported in diverse cancer types, including endometrial, ovarian, gastric, pancreas, ovary, prostate, central nervous system, and non-small cell lung cancers. The majority of the published data is based on studies of colorectal cancer patients. MSI-H tumors have been reported to be present in between 2% and 30% of primary colorectal tumors and 20% to 77% of metastatic lesions. Stage II colon cancers show higher rates of MSI-H than more advanced tumors, and rectal cancers and other left-sided colon cancers are noted to have lower frequencies of MSI-H tumors. The frequency of dMMR tumors in the other tumor types for which it has been reported is less well documented, and likely lower than seen in colorectal cancer.

Due to the high level of neo-antigens present, MSI-H tumors have been shown to respond to anti-PD-1 therapy. Pembrolizumab received accelerated approval by the FDA in 2017 for MSI-H solid tumors that have progressed following prior treatment, as well as in colorectal cancer that has progressed following chemotherapy. In five uncontrolled, single-arm clinical trials totaling 149 patients with diverse MSI-H tumor types, pembrolizumab gave a response rate of 39.6% and a complete response rate of 7.4%. In the 90 patient subset with MSI-H CRC, pembrolizumab gave a 36% response rate. Nivolumab was also granted accelerated approval for MSI-H colorectal cancer that has progressed following chemotherapy. In a single arm 74 patient clinical trial with nivolumab, the response rate was 32% and the complete response rate was 3%.

Triple negative breast cancer

According to the American Cancer Society, triple negative breast cancer, or TNBC, has an incidence of approximately 37,000 cases and approximately 6,000 deaths attributable to the disease annually in the United States. Globally, TNBC accounts for approximately 12% to 17% of all breast cancers, with approximately 170,000 new cases among an estimated 1 million cases of breast cancer diagnosed annually. As a group, patients with TNBC have poor outcomes relative to other breast cancer subtypes, with reduced disease-free and overall survival rates.

TNBC refers to any breast cancer that does not express the genes for estrogen receptor, progesterone receptor or Her2/neu. The lack of tumor expression of these receptors precludes the use of targeted therapies, making chemotherapy the primary systemic treatment for patients with TNBC in both the early and advanced-stages of disease. Although responses and complete responses are achieved, they are usually short in duration. Due to the limited efficacy of systemic chemotherapy, fewer than 30% of women with metastatic TNBC survive five years after diagnosis, and virtually all women with metastatic TNBC will ultimately die of the disease.

Studies have shown that the presence of tumor infiltrating lymphocytes, or TILs, is associated with better outcomes for TNBC. In addition, PD-L1 expression is associated with TILs and 20% to 30% of TNBCs express PD-L1. Based upon this high incidence of expression and demonstrated responses in other tumor types, immune-based approaches are being explored using immune checkpoint blockade therapies in TNBC. In a Phase Ib clinical trial of pembrolizumab in 32 heavily pretreated PD-L1-positive patients, the response rate was 18.5% and the complete response rate was 3.7% for the 27 patients who were evaluable for efficacy. A Phase 1 clinical trial of atezolizumab, a monoclonal antibody targeting PD-L1, in 27 heavily pretreated TNBC patients gave a response rate of 19% in 21 efficacy evaluable patients and a complete response rate of 9.5%. A Phase 2 trial (KEYNOTE-082) has also tested pembrolizumab in patients previously treated with chemotherapy for metastatic disease (Cohort A, 170 patients) and patients previously untreated with chemotherapy for metastatic disease with PD-L1 positive tumors (Cohort B, 84 patients). Cohort A gave a response rate of 4.8% for PD-L1 positive patients with a complete response rate of 1% and a response rate of 4.7% for PD-L1 negative patients with a complete response rate of 0.6%. Cohort B gave a response rate of 23% with a complete response rate of 3.6%. Both pembrolizumab and atezolizumab are being tested in Phase 3 trials as single agents or in combination with other therapies.

Intellectual property

We believe our rights under issued patents, if obtained, and patent applications will provide a competitive advantage. Our success depends in part on our ability to obtain and maintain proprietary protection for our product candidates, technology and know-how, to operate without infringing the proprietary rights of others and to prevent others from infringing upon our proprietary rights. Our policy is to seek to protect our proprietary position by, among other methods, filing United States and foreign patent applications related to our proprietary technology, inventions and improvements that are 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 position.

For the core technology in each of our product candidates, patent applications are pending under the Patent Cooperation Treaty, or PCT, and are currently at the international stage. As of July 9, 2018, we own five PCT applications and four U.S. provisional applications. The applications include claims to oncolytic virus compositions of matter, including RP1, pharmaceutical compositions encompassing the oncolytic viruses, and methods of use in treating cancer, including the target indications discussed above.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application. In the United States, the patent term of a patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration of a portion of the patent term lost during the U.S. clinical development and FDA regulatory review process. The Hatch-Waxman Act permits a patent term extension of up to five years beyond the expiration of the patent. The length of the patent term extension is related to the length of time the drug is under clinical development in the United States and the length of time the drug is under regulatory review. Patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug may be extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug. In the future, if and when our products receive FDA approval, and if and when patents grant, we expect to apply for patent term extensions on patents covering those products. We plan to seek patent term extensions to any of our issued patents in any jurisdiction where these are available, however there is no guarantee that the applicable authorities, including the FDA in the United States, will agree with our assessment of whether such extensions should be granted, and if granted, the length of such extensions.

We may rely, in some circumstances, on trade secrets to protect our technology. We seek to protect our proprietary technology and processes, in part, by confidentiality agreements with our employees, consultants, scientific advisors and other contractors, as well as physical security of our premises and our information technology systems.

Competition

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary rights. We compete in the highly competitive markets that address cancer and face significant competition from many sources, including pharmaceutical, biopharmaceutical and biotechnology companies, as well as universities and private and public research institutions. Many of our competitors have significantly greater financial, manufacturing, marketing and drug development resources than we do. Large biopharmaceutical companies in particular have extensive experience in clinical testing and in obtaining regulatory approvals for drugs and biologicals. These companies also have significantly greater research capabilities than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies or universities and research institutions.

Our competitors fall primarily into the following groups of treatment:

- traditional cancer therapies, including chemotherapy, surgery, radiation and targeted therapies;
- approved immunotherapy antibodies and immunotherapy antibodies in clinical trials;
- oncolytic immunotherapies, including T-Vec, the only FDA-approved oncolytic immunotherapy for treating advanced melanoma, and other oncolytic immunotherapies in clinical trials;
- therapies aimed at activating innate immunity such as those targeting STING and TLRs;
- cancer vaccines including personalized vaccines and those targeting tumor neo-antigens; and
- cell-based therapies, such as CAR-T, T cell receptor-based, and NK cell therapies.

Our commercial opportunity will be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer side effects, are easier to administer or are less expensive alone or in combination with other therapies than any products that we may develop alone or in combination with other therapies, especially if these get to market sooner than our products. These third parties also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies and technology licenses complementary to our programs or advantageous to our business.

Our oncolytic product candidates, if and when marketed, will compete with a number of drugs that are currently marketed or in development that also target cancer but that utilize a different mechanism of action. To compete effectively with these agents, our product candidates will need to demonstrate advantages that lead to improved clinical efficacy and safety compared with these competitors. At the same time, however, we believe that our oncolytic product candidates, if and when ultimately marketed, would likely be used principally in combination with checkpoint blockade therapies in addition to existing cancer therapies, including surgery, chemotherapy, radiation therapy and other biological therapies such as antibodies targeting particular surface receptors. We therefore believe that our product candidates, if and when marketed, would largely complement rather than compete directly with these existing treatment options.

We do, however, expect to face direct and increasing competition from a number of companies that are also seeking to develop cancer therapies based on oncolytic viruses and other ways to prime the immune system, including neo-antigen vaccination. We believe that our ability to successfully compete will depend, among other things, on our ability to:

- expeditiously advance the development of our product candidates;
- design, enroll patients in and successfully complete appropriate clinical trials in a timely fashion;
- gain regulatory approval for our product candidates in their first indications as well as further indications;
- establish collaborations and partnerships for the development and marketing of our product candidates;
- commercialize our product candidates successfully, including convincing physicians, insurers and third-party payors of the safety and efficacy of our product candidates over currently approved therapies;
- secure and protect intellectual property rights based on our innovations; and
- manufacture or otherwise obtain and sell commercial quantities of future products to the market.

Manufacturing and suppliers

We have established an operations leadership team with extensive experience in manufacturing biologics based on viruses, including oncolytic products and gene therapy products, and in the construction, validation, approval and operation of facilities designed to manufacture biologics. Our team has already developed a robust and reproducible manufacturing process for our product candidates. We are also developing our product candidates for maximum practicality of use compared with some other oncolytic immunotherapies; in particular, our product candidates do not require refrigeration at -70^0 Celsius.

To date, our third-party contract manufacturer in Europe has been responsible for sourcing raw materials for use in the manufacture, in accordance with cGMP, of our product candidates for use in our planned early clinical trials. We currently use fetal bovine sera, a commonly used growth supplement, in the initial growth of the mammalian cells used in the production of our viral product candidates and a recombinant human protein to increase the stability of our drug formulation. We are in the process of developing our raw material supply chain for our product candidates as part of the process of establishing our own manufacturing facility and intend to enter into commercial supply, collaboration or similar agreements prior to conducting advanced clinical trials.

We have signed a lease for an approximately 63,000 square-foot facility in Framingham, Massachusetts where we plan to establish, equip, and operate our own in-house manufacturing facility in order to secure supplies for pivotal studies and commercial launch. This facility is intended to give us control over the whole supply chain for our products and product candidates. The facility is intended to be both multi-product and multi-use, so that we will be able to produce two different products in parallel and several different products in the same facility.

By establishing our own manufacturing facility, we aim to minimize or eliminate our reliance on contract manufacturing organizations, which typically have limited capacity at commercial scale and quality. We believe that having control over the whole manufacturing process will allow us to reduce cycle times and cost of goods for commercial production and to shorten overall timelines for new product candidates in our development pipeline, as well as help us to develop drug formulations or presentations to simplify distribution and/or administration of future oncolytic immunotherapies. We also believe that having a dedicated manufacturing facility will allow us to optimize commercial-scale processes and to develop a suitable workforce capable of supporting market launch.

Sales and marketing

None of our product candidates has been approved for sale. If and when our product candidates receive marketing approval, we intend to commercialize them on our own in the United States and potentially with pharmaceutical or biotechnology partners in other geographies. We currently have no sales, marketing or commercialization capabilities and have no experience as a company doing such activities. However, we intend to build the necessary capabilities and infrastructure over time following the advancement of our product candidates. Clinical data, the size of the opportunity and the size of the commercial infrastructure required will influence our commercialization plans and decision making.

Collaborations

BMS

On February 26, 2018, we entered into a Clinical Trial Collaboration and Supply Agreement with BMS. Pursuant to the agreement, BMS will provide to us, at no cost, nivolumab, its anti-PD-1 therapy, for use in combination with RP1 in our ongoing Phase 1/2 clinical trial. Under the agreement, we will sponsor, fund and conduct the clinical trial in accordance with an agreed-upon protocol. Under the agreement, BMS has granted us a non-exclusive, non-transferrable, royalty-free license (with a right to sublicense) under its intellectual property to use nivolumab in the clinical trial and has agreed to manufacture and supply nivolumab, at its cost and for no charge to us, for use in the clinical trial. Both parties will own the study data produced in the clinical trial, other than study data related solely to nivolumab, which will belong solely to BMS, or study data related solely to RP1, which will belong solely to us.

Unless earlier terminated, the agreement will remain in effect until (a) the completion of the clinical trial, (b) all related clinical trial data have been delivered to both parties and (c) the completion of any statistical analyses and bioanalyses contemplated by the clinical trial protocol or any analysis otherwise agreed upon by the parties. The agreement may be terminated by either party (i) in the event of an uncured material breach by the other party, (ii) in the event the other party is insolvent or in bankruptcy proceedings or (iii) for safety reasons. Upon termination, the licenses granted to us to use nivolumab in the clinical trial will terminate. The agreement contains representations, warranties, undertakings and indemnities customary for a transaction of this nature.

Regeneron

On May 29, 2018, we entered into a Master Clinical Trial Collaboration and Supply Agreement with Regeneron Pharmaceuticals, Inc., or Regeneron. Pursuant to the agreement we agreed to undertake one or more clinical trials with Regeneron for the administration of our product candidates in combination with cemiplimab, an anti-PD-1 therapy being developed by Regeneron, across multiple solid tumor types, the first of which is intended to be our planned Phase 2 clinical trial of RP1 in patients with CSCC. Each clinical trial will be conducted pursuant to an agreed study plan which, among other things, will identify the name of the sponsor and which party will manage the particular study, and include the protocol, the budget and a schedule of clinical obligations. The first study plan related to the Phase 2 clinical trial has been agreed.

Pursuant to the terms of the agreement, each party granted the other party a non-exclusive license of their respective intellectual property and agreed to contribute the necessary resources needed to fulfill their respective obligations, in each case, under the terms of the agreed study plans. Development costs of a particular clinical trial will be split equally. The agreement contains representations, warranties, undertakings and indemnities customary for a transaction of this nature. The agreement also contains certain covenants that restrict us from entering into a third-party arrangement with respect to the use of our product candidates in combination with an anti-PD-1 therapy and that restrict Regeneron from entering into a third-party arrangement with respect to the use of cemiplimab in combination with an HSV-1 virus, in each case, for the treatment of a tumor type that is the subject of a clinical trial to which the covenants apply. Unless otherwise mutually agreed in a future study plan, these covenants are only applicable to our planned Phase 2 clinical trial in CSCC, and expire upon the one-year anniversary of the commencement of the applicable study plan.

The agreement may be terminated by either party if (i) there is no active study plan for which a final study report has not been completed, (ii) the parties have not entered into a study plan for an additional clinical trial within a period of time after the delivery of the most recent final study report or (iii) in the event of a material breach.

Regulatory matters

Government authorities in the United States, at the federal, state, and local level, and in other countries, extensively regulate, among other things, the research, development, testing, approval, manufacture, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import, and export of biopharmaceutical products such as those we are developing. In addition, manufacturers of biopharmaceutical products participating in Medicaid and Medicare are required to comply with mandatory price reporting, discount, and rebate requirements. The processes for obtaining regulatory approvals in the United States and in foreign countries, along with compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

FDA and EU regulation

In the United States, the FDA regulates biologics under the Federal Food, Drug, and Cosmetic Act, or FDCA, the Public Health Services Act, or PHSA, and their implementing regulations. The process required by the FDA before product candidates may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies, and formulation studies in compliance with GLP regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin at United States clinical trial sites;

- approval by an IRB for each clinical site, or centrally, before each trial may be initiated;
- adequate and well-controlled human clinical trials to establish the safety, purity, and potency of the proposed product candidate for its intended use, performed in accordance with GCPs;
- development of manufacturing processes to ensure the product candidate's identity, strength, quality, purity, and potency;
- submission to the FDA of a BLA;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the products are produced to assess compliance with current cGMPs, and to assure that the facilities, methods, and controls are adequate to preserve the therapeutics' identity, strength, quality, purity, and potency as well as satisfactory completion of an FDA inspection of selected clinical sites and selected clinical investigators to determine GCP compliance; and
- FDA review and approval of the BLA to permit commercial marketing for particular indications for use.

Preclinical studies and IND submission

The testing and approval process of product candidates requires substantial time, effort, and financial resources. Satisfaction of the FDA's pre-market approval requirements typically takes many years and the actual time required may vary substantially based upon the type, complexity, and novelty of the product or disease. Preclinical studies include laboratory evaluation of chemistry, pharmacology, toxicity, and product formulation, as well as animal studies to assess potential safety and efficacy. Such studies must generally be conducted in accordance with the FDA's GLPs. Prior to commencing the first clinical trial at a United States investigational site with a product candidate, an IND sponsor must submit the results of the preclinical tests and preclinical literature, together with manufacturing information, analytical data, any available clinical data or literature, and proposed clinical study protocols among other things, to the FDA as part of an IND.

An IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, notifies the applicant of safety concerns or questions related to one or more proposed clinical trials and places the trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Clinical holds also may be imposed by the FDA at any time before or during trials due to safety concerns or non-compliance. As a result, submission of an IND may not result in FDA authorization to commence a clinical trial. A separate submission to an existing IND must also be made for each successive clinical trial conducted during product development.

Clinical trials

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with federal regulations and GCP requirements, which include the requirements that all research subjects provide their informed consent in writing for their participation in any clinical trial, as well as review and approval of the study by an IRB. Investigators must also provide certain information to the clinical trial sponsors to allow the sponsors to make certain financial disclosures to the FDA. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the trial procedures, the parameters to be used in monitoring safety, the effectiveness criteria to be evaluated, and a statistical analysis plan. A protocol for each clinical trial, and

any subsequent protocol amendments, must be submitted to the FDA as part of the IND. In addition, an IRB at each study site participating in the clinical trial or a central IRB must review and approve the plan for any clinical trial, informed consent forms, and communications to study subjects before a study commences at that site. An IRB considers, among other things, whether the risks to individuals participating in the trials are minimized and are reasonable in relation to anticipated benefits, and whether the planned human subject protections are adequate. The IRB must continue to oversee the clinical trial while it is being conducted. Once an IND is in effect, each new clinical protocol and any amendments to the protocol must be submitted to the IND for FDA review, and to the IRB for approval. If a product candidate is being investigated for multiple intended indications, separate INDs may also be required. Progress reports detailing the results of the clinical trials must also be submitted at least annually to the FDA and the IRB and more frequently if serious adverse events or other significant safety information is found.

The FDA may order the temporary, or permanent, discontinuation of a clinical trial at any time, or impose other sanctions, if it believes that the clinical trial either is not being conducted in accordance with FDA requirements or presents an unacceptable risk to the clinical trial patients. An IRB may also require the clinical trial at the site to be halted, either temporarily or permanently, for failure to comply with the IRB's requirements or if the trial poses an unexpected serious harm to subjects. The FDA or an IRB may also impose conditions on the conduct of a clinical trial. Clinical trial sponsors may also choose to discontinue clinical trials as a result of risks to subjects, a lack of favorable results, or changing business priorities.

Information about certain clinical trials, including a description of the study and study results, must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on their clinicaltrials.gov website. Manufacturers or distributors of investigational products for the diagnosis, monitoring, or treatment of one or more serious diseases or conditions must also have a publicly available policy on evaluating and responding to requests for expanded access requests.

Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial that regularly reviews accumulated data and advises the study sponsor regarding the continuing safety of the trial. This group may also review interim data to assess the continuing validity and scientific merit of the clinical trial. This group receives special access to unblinded data during the clinical trial and may advise the sponsor to halt the clinical trial if it determined there is an unacceptable safety risk for subjects or on other grounds, such as no demonstration of efficacy.

The manufacture of investigational biologics for the conduct of human clinical trials is subject to current cGMP requirements. Investigational biologics and active ingredients imported into the United States are also subject to regulation by the FDA. Further, the export of investigational products outside of the United States is subject to regulatory requirements of the receiving country as well as United States export requirements under the FDCA.

In general, for purposes of BLA approval, human clinical trials are typically conducted in three sequential phases, which may overlap or be combined.

- Phase 1—Trials are initially conducted in healthy human volunteers or subjects with the target disease or condition and test the product candidate for safety, dosage tolerance, structure-activity relationships, mechanism of action, absorption, metabolism, distribution, and excretion. If possible, Phase 1 trials may also be used to gain an initial indication of product effectiveness.

- Phase 2—Controlled trials are conducted in limited subject populations with a specified disease or condition to evaluate the effectiveness of the product candidate for a particular indication or indications,

identify optimal dosages, dosage tolerance and schedule, possible adverse effects and safety risks, and expanded evidence of safety.

- Phase 3—These adequate and well-controlled clinical trials are undertaken in expanded subject populations, generally at geographically dispersed clinical trial sites, to generate enough data to provide statistically significant evidence of clinical 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. Typically, two Phase 3 trials are required by the FDA for product approval. Under some limited circumstances, however, the FDA may approve a BLA based upon a single Phase 3 clinical trials.

Additional kinds of data may also help to support a BLA, such as patient experience data.

Further, under certain circumstances, manufacturers and sponsors of investigational biopharmaceutical product candidates can provide access to the product candidates to certain qualifying patients outside of clinical trials. For instance, under the FDA's expanded access program, with FDA approval and subject to certain requirements, sponsors may provide access to product candidates to patients with serious or immediately life threatening diseases or conditions for which there is no comparable or satisfactory alternative therapy, provided that the potential patient benefit justifies the risks, the risks are not unreasonable in the context of the disease or condition to be treated, and the provision of the product candidate for the requested use will not interfere with clinical investigations. The specific expanded access criteria and requirements depend on the number of expanded access patients. Sponsors and investigators of expanded access programs must still comply with the FDA's clinical trial and are subject to protection regulations. Federal and state laws in the United States, referred to as right to try laws, also establish a separate mechanism through which certain patients with life threatening diseases or conditions, who have exhausted all approved treatment options and are unable to participate in a clinical trial, may request access to investigational product candidates that have completed a Phase 1 clinical trial. While certain criteria must be met for a patient to be eligible for access to product candidates under right to try laws, these laws do not require the FDA to approve the use of the product candidate and do not require compliance with the majority of the FDA's clinical trial regulations.

The FDA may also require, or companies may conduct, additional clinical trials for the same indication after a product is approved. These so-called Phase 4 trials may be made a condition to be satisfied after approval. The results of Phase 4 trials can confirm or refute the effectiveness of a product candidate, and can provide important safety information.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the product candidate as well as finalize a process for manufacturing the product in commercial quantities in accordance with current cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, manufacturers must develop methods for testing the identity, strength, quality, potency, and purity of the final product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

In relation to the clinical trial in the United Kingdom and in so far as trials will be conducted in other countries with a view to obtaining a marketing authorization from the European Medicines Agency, there are equivalent cGMP requirements and European Union regulatory rules that are implemented nationally. However, enforcement of such rules is conducted by the regulatory authority in which the trial is carried out, which is the MHRA in the United Kingdom.

BLA submission, review by the FDA, and marketing approval

Assuming successful completion of the required clinical and preclinical testing, the results of product development, including chemistry, manufacture, and controls, non-clinical studies, and clinical trial results, including negative or ambiguous results as well as positive findings, are all submitted to the FDA, along with the proposed labeling, as part of a BLA requesting approval to market the product for one or more indications. In most cases, the submission of a BLA is subject to a substantial application user fee. These user fees must be paid at the time of the first submission of the application, even if the application is being submitted on a rolling basis. Fee waivers or reductions are available in certain circumstances. One basis for a waiver of the application user fee is if the applicant employs fewer than 500 employees, including employees of affiliates, the applicant does not have an approved marketing application for a product that has been introduced or delivered for introduction into interstate commerce, and the applicant, including its affiliates, is submitting its first marketing application. Product candidates that are designated as orphan products, which are further described below, are also not subject to application user fees unless the application includes an indication other than the orphan indication.

In addition, under the Pediatric Research Equity Act, or PREA, a BLA or supplement to a BLA for a new active ingredient, indication, dosage form, dosage regimen, or route of administration, must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. Also, under the FDA Reauthorization Act of 2017, beginning in 2020, for applications for product candidates intended for the treatment of adult cancer which are directed at molecular targets that the FDA determines to be substantially relevant to the growth or progression of pediatric cancer, in place of the PREA investigations, sponsors must submit, with the application, reports from molecularly targeted pediatric cancer investigations designed to yield clinically meaningful pediatric study data, using appropriate formulations, to inform potential pediatric labeling. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Orphan products are also exempt from the PREA requirements.

The FDA also may require submission of a REMS to ensure that the benefits of the biologic outweigh the risks. The REMS plan could include medication guides, physician communication plans, and elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools. An assessment of the REMS must also be conducted at set intervals. Following product approval, a REMS may also be required by the FDA if new safety information is discovered and the FDA determines that a REMS is necessary to ensure that the benefits of the biologic outweigh the risks.

Once the FDA receives an application, it has 60 days to review the BLA to determine if it is substantially complete to permit a substantive review, before it accepts the application for filing. The FDA may request additional information rather than accept a BLA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review.

Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act, or PDUFA, the FDA has set the review goal of completing its review of 90% of all applications within ten months from the 60-day filing date for its initial review of a BLA. This review goal is referred to as the PDUFA date. The PDUFA date is only a goal, thus, the FDA does not always meet its PDUFA dates. The review process and

the PDUFA date may also be extended if the FDA requests or the sponsor otherwise provides substantial additional information or clarification regarding the submission.

The FDA may also refer certain applications to an advisory committee. Before approving a biologic for which no active ingredient, including any ester or salt of active ingredients, has previously been approved by the FDA, the FDA must either refer that biologic to an external advisory committee or provide in an action letter, a summary of the reasons why the FDA did not refer the product candidate to an advisory committee. An advisory committee is typically a panel that includes clinicians and other experts, which review, evaluate, and make a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

The FDA reviews applications to determine, among other things, whether a product is safe, pure and potent and whether the manufacturing methods and controls are adequate to assure and preserve the product's identity, strength, quality, potency, and purity. Before approving a BLA, the FDA typically will inspect the facility or facilities where the product is manufactured, referred to as a Pre-Approval Inspection. The FDA will not approve an application unless it determines that the manufacturing processes and facilities, including contract manufacturers and subcontractors, are in compliance with current cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving a BLA the FDA will inspect one or more clinical trial sites to assure compliance with GCPs.

After evaluating the BLA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a Complete Response Letter, or CRL. A CRL indicates that the review cycle of the application is complete and the application is not ready for approval and describes all of the specific deficiencies that the FDA identified in the BLA. A CRL generally contains a statement of specific conditions that must be met in order to secure final approval of the BLA, and may require additional clinical or preclinical testing in order for the FDA to reconsider the application. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. If a CRL is issued, the applicant may either: resubmit the BLA, addressing all of the deficiencies identified in the letter; withdraw the application; or request an opportunity for a hearing. The FDA has the goal of reviewing 90% of application resubmissions in either two or six months of the resubmission date, depending on the kind of resubmission. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA may issue an approval letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings, or precautions be included in the product labeling, including a boxed warning, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a product's safety and efficacy after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms under a REMS which can materially affect the potential market and profitability of the product. The FDA may also not approve label statements that are necessary for successful commercialization and marketing.

After approval, some 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. The FDA may also withdraw the product approval if compliance with the pre- and post-marketing regulatory standards are not maintained or if problems occur after the product reaches the marketplace. Further, should new safety information arise, additional testing, product labeling, or FDA notification may be required.

Broadly equivalent requirements and controls similarly apply to the submission of marketing authorization applications to the European Medicines Agency in the European Union and, post-approval, to the holding of such marketing authorizations.

Biosimilars and exclusivity

The BPCIA creates an abbreviated approval pathway for biological products shown to be highly similar to or interchangeable with an FDA-licensed reference biological product. Biosimilarity sufficient to reference a prior FDA-approved product requires a high similarity to the reference product notwithstanding minor differences in clinically inactive components, and no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency. Biosimilarity must be shown through analytical studies, animal studies, and at least one clinical trial, absent a waiver by the FDA. There must be no difference between the reference product and a biosimilar in mechanism of action, conditions of use, route of administration, dosage form, and strength. A biosimilar product may be deemed interchangeable with a prior approved product if it meets the higher hurdle of demonstrating that it can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biosimilar 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.

A reference biologic is granted 12 years of exclusivity from the time of first licensure of the reference product, and no application for a biosimilar can be submitted for four years from the date of licensure of the reference product. However, certain changes and supplements to an approved BLA, and subsequent applications filed by the same sponsor, manufacturer, licensor, predecessor in interest, or other related entity do not qualify for the twelve-year exclusivity period. The PHSA also includes provisions to protect reference products that have patent protection. The biosimilar product sponsor and reference product sponsor may exchange certain patent and product information for the purpose of determining whether there should be a legal patent challenge. Based on the outcome of negotiations surrounding the exchanged information, the reference product sponsor may bring a patent infringement suit and injunction proceedings against the biosimilar product sponsor. The biosimilar applicant may also be able to bring an action for declaratory judgment concerning the patent.

In the European Union there is a period of 10 years (or 11 years for significant new indications) of data exclusivity so that those seeking to market biosimilars cannot apply on an abridged basis for a marketing authorization for eight years from when the product was first marketed in the European Union and cannot place it on the market for 10 or 11 years from such first marketing.

If approved, biologics may also be eligible for periods of United States patent term restoration. If granted, patent term restoration extends the patent life of a single unexpired patent, that has not previously been extended, for a maximum of five years. The total patent life with the extension also cannot exceed fourteen years from the product's approval date. Subject to the prior limitations, the period of the extension is calculated by adding half of the time from the effective date of an IND to the initial submission of a marketing application, and all of the time between the submission of the marketing

application and its approval. This period may also be reduced by any time that the applicant did not act with due diligence.

In the European Union, a supplementary protection certificate, or SPC, can similarly extend a patent term for a maximum of five years. A six-month additional extension, however, is available if the SPC relates to a medicinal product for which data has been submitted according to a Pediatric Investigation Plan.

Post-approval requirements

Any products manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements related to manufacturing, recordkeeping, and reporting, including adverse experience reporting, deviation reporting, shortage reporting, and periodic reporting, product distribution, advertising, marketing, promotion, certain electronic records and signatures, and post-approval obligations imposed as a condition of approval, such as Phase 4 clinical trials, REMS, and surveillance to assess safety and effectiveness after commercialization.

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 program user fee requirements for approved products, excluding, under certain circumstances, orphan products. In addition, manufacturers and other entities involved in the manufacture and distribution of approved therapeutics are required to register their establishments with the FDA and certain state agencies, list their products, and are subject to periodic announced and unannounced inspections by the FDA and these state agencies for compliance with current cGMP and other requirements, which impose certain procedural and documentation requirements upon us and third-party manufacturers. Manufacturers must continue to expend time, money, and effort in the areas of production and quality-control to maintain compliance with current cGMPs. Regulatory authorities may withdraw product approvals or request product recalls if a company fails to comply with regulatory standards, if it encounters problems following initial marketing, or if previously unrecognized problems are subsequently discovered.

Changes to the manufacturing process are strictly regulated and often require prior FDA approval or notification before being implemented. FDA regulations also require investigation and correction of any deviations from current cGMP and specifications, 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 current cGMP compliance.

The FDA also strictly regulates marketing, labeling, advertising, and promotion of products that are placed on the market. A company can make only those claims relating to safety and efficacy, purity, and potency that are approved by the FDA. Physicians, in their independent professional medical judgment, may prescribe legally available products for unapproved indications that are not described in the product's labeling and that differ from those tested and approved by the FDA. Biopharmaceutical companies, however, are required to promote their products 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, including, but not limited to, criminal and civil penalties under the FDCA and False Claims Act, exclusion from participation in federal healthcare programs, mandatory compliance programs under corporate integrity agreements, suspension and debarment from government contracts, and refusal of orders under existing government contracts.

Moreover, the enacted Drug Quality and Security Act imposes obligations on manufacturers of biopharmaceutical products related to product tracking and tracing. Among the requirements of this legislation, manufacturers are required to provide certain information regarding the products to individuals and entities to which product ownership is transferred, will be required to label products with a product identifier, and are required to keep certain records regarding the product. The transfer of information to subsequent product owners by manufacturers is also required to be done electronically. Manufacturers must also verify that purchasers of the manufacturers' products are appropriately licensed. Further, under this legislation, manufactures have product investigation, quarantine, disposition, and notification responsibilities related to counterfeit, diverted, stolen, and intentionally adulterated products that would result in serious adverse health consequences or death to humans, as well as products that are the subject of fraudulent transactions or which are otherwise unfit for distribution such that they would be reasonably likely to result in serious health consequences or death. Similar requirements additionally are and will be imposed through this legislation on other companies within the biopharmaceutical product supply chain, such as distributors and dispensers.

Adverse event reporting and submission of periodic reports, including annual reports and deviation reports, are required following FDA approval of a BLA. 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 significant regulatory actions. Such actions may include refusal to approve pending applications, license suspension or revocation, imposition of a clinical hold or termination of clinical trials, warning letters, untitled letters, cyber letters, modification of promotional materials or labeling, provision of corrective information, imposition of post-market requirements including the need for additional testing, imposition of distribution or other restrictions under a REMS, product recalls, product seizures or detentions, refusal to allow imports or exports, total or partial suspension of production or distribution, FDA debarment, injunctions, fines, consent decrees, corporate integrity agreements, suspension and debarment from government contracts, and refusal of orders under existing government contracts, exclusion from participation in federal and state healthcare programs, restitution, disgorgement, or civil or criminal penalties, including fines and imprisonment, and result in adverse publicity, among other adverse consequences.

Additional controls for biologics

To help reduce the increased risk of the introduction of adventitious agents, the PHSA emphasizes the importance of manufacturing controls for products whose attributes cannot be precisely defined. The PHSA also provides authority to the FDA to immediately suspend licenses in situations where there exists a danger to public health, to prepare or procure products in the event of shortages and critical public health needs, and to authorize the creation and enforcement of regulations to prevent the introduction or spread of communicable diseases in the United States and between states.

After a BLA is approved, the product may also be subject to official lot release as a condition of approval. As part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing the results of all of the manufacturer's tests performed on the lot. The FDA may also perform certain confirmatory tests on lots of some products before releasing the lots for distribution by the manufacturer.

In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products.

Fraud and abuse, data privacy and security, and transparency laws and regulations

Our business activities, including but not limited to, research, sales, promotion, distribution, medical education, and other activities following product approval will be subject to regulation by numerous federal and state regulatory and law enforcement authorities in the United States in addition to the FDA, including potentially the Department of Justice, the Department of Health and Human Services and its various divisions, including the CMS and the Health Resources and Services Administration, the Department of Veterans Affairs, the Department of Defense, and state and local governments. Our business activities must comply with numerous healthcare laws, including but not limited to, anti-kickback and false claims laws and regulations as well as data privacy and security laws and regulations, which are described below, as well as state and federal consumer protection and unfair competition laws.

The federal Anti-Kickback Statute, which regulates, among other things, marketing practices, educational programs, pricing policies, and relationships with healthcare provides or other entities, prohibits, among other things, any person or entity, from knowingly and willfully offering, paying, soliciting, or receiving any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or in return for purchasing, leasing, ordering, or arranging for or recommending the purchase, lease, or order, or the referral to another for the furnishing or arranging for the furnishing of any item or service reimbursable under Medicare, Medicaid, or other federal healthcare programs, in whole or in part. The term "remuneration" has been interpreted broadly to include anything of value. The Anti-Kickback Statute has been interpreted to apply to arrangements between biopharmaceutical manufacturers on one hand and prescribers, purchasers, formulary managers, and beneficiaries on the other, as well as free trial and starter prescriptions provided through pharmacies. There are certain statutory exceptions and regulatory safe harbors protecting some common activities from prosecution. The exceptions and safe harbors are drawn narrowly, and practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases, or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the statute has been violated. The ACA modified the intent requirement under the Anti-Kickback Statute to a stricter standard, such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the ACA also provided that a violation of the federal Anti-Kickback Statute is grounds for the government or a whistleblower to assert that a claim for payment of items or services resulting from such violation constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act.

The federal civil False Claims Act prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment to, or approval by, the federal government, knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government, or avoiding, decreasing, or concealing an obligation to pay money to the federal government. A claim includes "any request or demand" for money or property presented to the U.S. government. The civil False Claims Act has been used to assert liability on the basis of kickbacks and other improper referrals, improperly reported government pricing metrics such as Best Price or Average Manufacturer Price, improper use of Medicare provider or supplier numbers when detailing a provider of services, improper promotion of off-label uses not expressly approved by the FDA in a product's label, and allegations as to misrepresentations with respect to the services rendered. In

addition, private payers have been filing follow-on lawsuits alleging fraudulent misrepresentation, although establishing liability and damages in these cases is more difficult than under the False Claims Act. Intent to deceive is not required to establish liability under the civil False Claims Act. Civil False Claims Act actions may be brought by the government or may be brought by private individuals on behalf of the government, called "qui tam" actions. If the government decides to intervene in a qui tam action and prevails in the lawsuit, the individual will share in the proceeds from any fines or settlement funds. If the government declines to intervene, the individual may pursue the case alone. The civil False Claims Act provides for treble damages and a civil penalty for each false claim, such as an invoice or pharmacy claim for reimbursement, which can aggregate into millions of dollars. For these reasons, since 2004, False Claims Act lawsuits against biopharmaceutical companies have increased significantly in volume and breadth, leading to several substantial civil and criminal settlements, as much as $3.0 billion, regarding certain sales practices and promoting off label uses. Civil False Claims Act liability may further be imposed for known Medicare or Medicaid overpayments, for example, overpayments caused by understated rebate amounts, that are not refunded within 60 days of discovering the overpayment, even if the overpayment was not caused by a false or fraudulent act. In addition, conviction or civil judgment for violating the False Claims Act may result in exclusion from federal health care programs, and suspension and debarment from government contracts, and refusal of orders under existing government contracts.

The government may further prosecute conduct constituting a false claim under the criminal False Claims Act. The criminal False Claims Act prohibits the making or presenting of a claim to the government knowing such claim to be false, fictitious, or fraudulent and, unlike the civil False Claims Act, requires proof of intent to submit a false claim.

The civil monetary penalties statute is another potential statute under which biopharmaceutical companies may be subject to enforcement. Among other things, the civil monetary penalties statue imposes fines against any person who is determined to have knowingly presented, or caused to be presented, claims to a federal healthcare program that the person knows, or should know, is for an item or service that was not provided as claimed or is false or fraudulent.

Payment or reimbursement of prescription therapeutics by Medicaid or Medicare requires manufacturers to submit certified pricing information to CMS. The Medicaid Drug Rebate statute requires manufacturers to calculate and report price points, which are used to determine Medicaid rebate payments shared between the states and the federal government and Medicaid payment rates for certain therapeutics. For therapeutics paid under Medicare Part B, manufacturers must also calculate and report their Average Sales Price, which is used to determine the Medicare Part B payment rate. In addition, therapeutics covered by Medicaid are subject to an additional inflation penalty which can substantially increase rebate payments. For products approved under a BLA, (including biosimilars) or an NDA, the VHCA requires manufacturers to calculate and report to the Veterans Administration, or VA, a different price called the Non-Federal Average Manufacturing Price, which is used to determine the maximum price that can be charged to certain federal agencies, referred to as the Federal Ceiling Price, or FCP. Like the Medicaid rebate amount, the FCP includes an inflation penalty. A Department of Defense regulation requires manufacturers to provide this discount on therapeutics dispensed by retail pharmacies when paid by the TRICARE Program. All of these price reporting requirements create risk of submitting false information to the government, and potential FCA liability.

The VHCA also requires manufacturers of covered therapeutics participating in the Medicaid program to enter into Federal Supply Schedule contracts with the VA through which their covered therapeutics must be sold to certain federal agencies at FCP. This necessitates compliance with applicable federal procurement laws and regulations, including submission of commercial sales and pricing information, and

subjects us to contractual remedies as well as administrative, civil, and criminal sanctions. In addition, the VHCA requires manufacturers participating in Medicaid to agree to provide different mandatory discounts to certain Public Health Service grantees and other safety net hospitals and clinics under the 340B program based on the manufacturer's reported Medicaid pricing information. The 340B program has its own regulatory authority to impose sanctions for non-compliance and adjudicate overcharge claims against manufacturers by the purchasing entities.

The HIPAA, also created federal criminal statutes that prohibit, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud or to 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, a healthcare benefit program, regardless of whether the payor is public or private, in connection with the delivery or payment for health care benefits, knowingly and willfully embezzling or stealing from a health care benefit program, willfully obstructing a criminal investigation of a health care offense 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, healthcare benefits, items, or services relating to healthcare matters. Additionally, the ACA amended the intent requirement of certain of these criminal statutes under HIPAA so that a person or entity no longer needs to have actual knowledge of the statute, or the specific intent to violate it, to have committed a violation.

The ACA further created new federal requirements for reporting, by applicable manufacturers of covered therapeutics, payments and other transfers of value to physicians and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members.

Further, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by HITECH, and its respective implementing regulations imposes certain requirements on covered entities relating to the privacy, security, and transmission of certain individually identifiable health information known as protected health information. Among other things, HITECH, through its implementing regulations, makes HIPAA's security standards and certain privacy standards directly applicable to business associates, defined as a person or organization, other than a member of a covered entity's workforce, that creates, receives, maintains, or transmits protected health information on behalf of a covered entity for a function or activity regulated by HIPAA. HITECH also strengthened the civil and criminal penalties that may be imposed against covered entities, business associates, and individuals, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, other federal and state laws may govern the privacy and security of health and other information in certain circumstances, many of which differ from each other in significant ways and may not be preempted by HIPPA, thus complicating compliance efforts.

Many states have also adopted laws similar to each of the above federal laws, which may be broader in scope and apply to items or services reimbursed by any third-party payor, including commercial insurers. Certain state laws also regulate manufacturers' use of prescriber-identifiable data. Certain states also require implementation of commercial compliance programs and compliance with the pharmaceutical industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government, or otherwise restrict payments or the provision of other items of value that may be made to healthcare providers and other potential referral sources; impose restrictions on marketing practices; or require manufacturers to track and report information related to payments, gifts, and other

items of value to physicians and other healthcare providers. Recently, states have enacted or are considering legislation intended to make drug prices more transparent and deter significant price increases. These laws may affect our future sales, marketing, and other promotional activities by imposing administrative and compliance burdens.

If our operations are found to be in violation of any of the laws or regulations described above or any other laws that apply to us, we may be subject penalties or other enforcement actions, including criminal and significant civil monetary penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, corporate integrity agreements, suspension and debarment from government contracts, and refusal of orders under existing government contracts, reputational harm, diminished profits and future earnings, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. Enforcement actions can be brought by federal or state governments, or as "qui tam" actions brought by individual whistleblowers in the name of the government under the civil False Claims Act if the violations are alleged to have caused the government to pay a false or fraudulent claim.

To the extent that any of our products are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals. In the European Union, the data privacy laws are generally perceived to be stricter than those which apply in the United States and include specific requirements for the transfer of personal data outside the European Union to the United States to ensure that European Union standards of data privacy will be applied to such data.

Coverage and reimbursement generally

The commercial success of our product candidates and our ability to commercialize any approved product candidates successfully will depend in part on the extent to which governmental payor programs at the federal and state levels, including Medicare and Medicaid, private health insurers, and other third-party payors provide coverage for and establish adequate reimbursement levels for our product candidates. Government authorities, private health insurers, and other organizations generally decide which therapeutics they will pay for and establish reimbursement levels for healthcare. Medicare is a federally funded program managed by CMS through local fiscal intermediaries and carriers that administer coverage and reimbursement for certain healthcare items and services furnished to the elderly and disabled. Medicaid is an insurance program for certain categories of patients whose income and assets fall below state defined levels and who are otherwise uninsured that is both federally and state funded and managed by each state. The federal government sets general guidelines for Medicaid and each state creates specific regulations that govern its individual program, including supplemental rebate programs that restrict coverage to therapeutics on the state Preferred Drug List. Similarly, government laws and regulations establish the parameters for coverage of prescription therapeutics by health plans participating in state exchanges and Tricare, the health care program for military personnel, retirees, and related beneficiaries. Some states have also created pharmacy assistance programs for individuals who do not qualify for federal programs. In the United States, private health insurers and other third-party payors often provide reimbursement for products and services based on the level at which the government provides reimbursement through the Medicare or Medicaid programs for such products and services.

In the United States, the European Union, and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which often has resulted in average selling prices lower than they would otherwise be and sometimes at or below the provider's acquisition cost. In the United States, it is also common for government and private health plans to use coverage determinations to leverage rebates from manufacturers in order to reduce the plans' net costs. These restrictions and limitations influence the purchase of healthcare services and products and lower the realization on manufacturers' sales of prescription therapeutics. Third-party payors are developing increasingly sophisticated methods of controlling healthcare costs. Third-party payors may limit coverage to specific therapeutic products on an approved list, or formulary, which might not include all of the FDA-approved products for a particular indication or might impose high copayment amounts to influence patient choice. Third-party payors also control costs by requiring prior authorization or imposing other dispensing restrictions before covering certain products and by broadening therapeutic classes to increase competition. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. Absent clinical differentiators, third-party payors may treat products as therapeutically equivalent and base formulary decisions on net cost. To lower the prescription cost, manufacturers frequently rebate a portion of the prescription price to the third-party payors. Recently, purchasers and third-party payors have begun to focus on value of new therapeutics and sought agreements in which price is based on achievement of performance metrics.

Federal programs also impose price controls through mandatory ceiling prices on purchases by federal agencies and federally funded hospitals and clinics and mandatory rebates on retail pharmacy prescriptions paid by Medicaid and Tricare. These restrictions and limitations influence the purchase of healthcare services and products. Legislative proposals to reform healthcare or reduce costs under government programs may result in lower reimbursement for our product candidates or exclusion of our product candidates from coverage. In addition, government programs like Medicaid include substantial penalties for increasing commercial prices over the rate of inflation which can affect realization and return on investment.

Private payors often rely on the lead of the governmental payors in rendering coverage and reimbursement determinations. Therefore, achieving favorable CMS coverage and reimbursement is usually a significant gating issue for successful introduction of a new product. In addition, many government programs as a condition of participation mandate fixed discounts or rebates from manufacturers regardless of formulary position or utilization, and then rely on competition in the market to attain further price reductions, which can greatly reduce realization on the sale.

Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the European Union will put additional pressure on product pricing, reimbursement, and utilization, which may adversely affect our future product sales and results of operations. These pressures can arise from rules and practices of managed care groups, competition within therapeutic classes, judicial decisions and governmental laws and regulations related to Medicare, Medicaid, and healthcare reform, biopharmaceutical coverage and reimbursement policies, and pricing in general. Patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Sales of our product candidates will therefore depend substantially, both domestically and abroad, on the extent to which the costs of our products will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health

administration authorities, such as Medicare and Medicaid, private health insurers, and other third-party payors.

As a result of the above, we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain the FDA approvals. Our product candidates may not be considered medically necessary or cost-effective, or the rebate percentages required to secure coverage may not yield an adequate margin over cost.

Moreover, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in therapeutic development. Legislative proposals to reform healthcare or reduce costs under government insurance programs may result in lower reimbursement for our products and product candidates or exclusion of our products and product candidates from coverage. The cost containment measures that healthcare payors and providers are instituting and any healthcare reform could significantly reduce our revenues from the sale of any approved product candidates. We cannot provide any assurances that we will be able to obtain and maintain third-party coverage or adequate reimbursement for our product candidates in whole or in part.

The absence in Europe of any substantive harmonization of pricing and reimbursement regimes, including health technology assessment, means that separate negotiations will need to take place with the relevant authorities in each member state.

Healthcare reform measures

The United States and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals designed to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality, and expanding access. In the United States, the biopharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

For example, Medicare Part B, which covers products administered by physicians in an outpatient setting, may be undergoing a significant change in payment rates. CMS has proposed a rule that would compensate physicians for therapeutics they administer based on a smaller mark-up over the manufacturer's Average Sales Price and a fixed fee, which is intended to incentivize physicians to purchase and bill Medicare for lower priced products. The proposed rule would also authorize CMS to establish methods for determining comparative cost effectiveness and seek value-based discounts

Similarly, the American Recovery and Reinvestment Act of 2009 established funding for the federal government to compare the effectiveness of different treatments for the same illness. The Agency for Healthcare Research and Quality among other things, conducts patient-centered outcome research, develops evidence-based tools and resources on medication therapies, maintains databases of health care related data and standards, and issues periodic reports on specific studies. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the organization's research has had or will have on the sales of any product, if any such product or the condition that it is intended to treat is the subject of a study. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product

could adversely affect the sales of our product candidates. If third-party payors do not consider our product candidates to be cost-effective compared to other available therapies, they may not cover our product candidates, once approved, as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

Moreover, the ACA broadened access to health insurance, attempts to reduce or constrain the growth of healthcare spending, enhanced remedies against fraud and abuse, added new transparency requirements for healthcare and health insurance industries, imposed new taxes and fees on the health care industry, and imposed additional health policy reforms. The law expanded the eligibility criteria and mandatory eligibility categories for Medicaid programs, thereby potentially increasing both the volume of sales and manufacturers' Medicaid rebate liability. The law also expanded the 340B discount program that mandates discounts to certain hospitals, community centers, and other qualifying providers, by expanding the categories of entities eligible to purchase under the program, although, with the exception of children's hospitals, these newly eligible entities are ineligible to receive discounted 340B pricing on orphan therapeutics used to treat an orphan disease or condition. The ACA revised the definition of "average manufacturer price, or AMP, for reporting purposes, which generally increased the amount of Medicaid rebates to states and created a separate AMP for certain categories of therapeutics provided in non-retail outpatient settings. The law additionally extended manufacturer's Medicaid rebate liability to covered therapeutics dispensed to patients enrolled in Medicaid managed care organizations and increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate program. The revisions to the AMP definition and Medicaid rebate formula can have the further effect of increasing the required 340B discounts. Further, the ACA requires manufacturers of therapeutics, to pay 50% of the pharmacy charge to Medicare Part D patients while they are in the coverage gap, and this percentage was increased to 70% by the Bipartisan Budget Act of 2018. Finally, the ACA imposes a significant annual fee on companies that manufacture or import branded prescription therapeutic products. Substantial new provisions affecting compliance have also been enacted through the ACA and otherwise, including the reporting of therapeutic sample distribution, which may require us to modify our business practices with healthcare practitioners. Although the ACA was recently amended to repeal the individual insurance mandate, and efforts to repeal and replace portions of the law may continue, it is likely that pressure on biopharmaceutical pricing, especially under the Medicare program, will continue, and may also increase our regulatory burdens and operating costs. Moreover, in the coming years, additional changes could be made to governmental healthcare programs that could significantly impact the success of our product candidates. Recently, CMS issued regulations reducing Medicare Part B payments to certain hospitals for outpatient therapeutics purchased under the 340B program.

The cost of biopharmaceuticals continues to generate substantial governmental and third-party payor interest. We expect that the biopharmaceutical industry will experience pricing pressures due to the trend toward managed healthcare, the increasing influence of managed care organizations and additional legislative proposals. Our results of operations could be adversely affected by current and future healthcare reforms.

Some third-party payors also require pre-approval of coverage for new or innovative devices or therapies before they will reimburse healthcare providers that use such therapies. While we cannot predict whether any proposed cost-containment measures will be adopted or otherwise implemented in the future, the announcement or adoption of these proposals could have a material adverse effect on our ability to obtain adequate prices for our product candidates and operate profitably.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. The Budget Control Act of 2011, as amended, created the Joint Select Committee on Deficit Reduction to

recommend proposals in spending reductions to Congress. The Joint Select Committee on Deficit Reduction did not achieve its targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, triggering the legislation's automatic reductions to several government programs. These reductions include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year. The Bipartisan Budget Act of 2018 retained the federal budget "sequestration" Medicare payment reductions of 2%, and extended it through 2027. The American Taxpayer Relief Act of 2012, further reduced Medicare payments to several categories of healthcare providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These and other healthcare reform initiatives may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our financial operations. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could further limit the prices we are able to charge, or the amounts of reimbursement available, for our product candidates once they are approved. The Bipartisan Budget Act also extended Manufacturer responsibility for prescription costs in the Medicare Part D coverage gap to biosimilars, which had previously been exempt.

The Foreign Corrupt Practices Act

The Foreign Corrupt Practices Act, or FCPA, prohibits any U.S. individual or business from paying, offering, or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party, or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations. Activities that violate the FCPA, even if they occur wholly outside the United States, can result in criminal and civil fines, imprisonment, disgorgement, oversight, and suspension and debarment from government contracts, and refusal of orders under existing government contracts.

Other foreign anti-corruption regimes are arguably of wider application. For instance, the U.K. Bribery Act 2010 applies to dealings with any decision maker whether in the private or public sector in a position of trust.

Facilities

Our current corporate headquarters are located in Woburn, Massachusetts. We lease this facility, which consists of approximately 4,000 square feet. Our Woburn lease expires in March 2021. We also lease an approximately 12,000 square-foot facility in Oxfordshire, United Kingdom, containing research and development, laboratory and office space. This lease expires in April 2026 and we have the right to terminate it in April 2021.

On June 22, 2018, we signed a lease for an approximately 63,000 square-foot facility in Framingham, Massachusetts to house our manufacturing operations and our translational science laboratory. We expect that the facility will be ready to produce clinical-grade material during the first half of 2020 and ultimately to be able to support commercial product launch. Pursuant to the lease agreement, the lease term is estimated to commence in November 2018 subject to the landlord completing certain agreed upon landlord improvements. The rent commencement date is estimated to be eight months after the commencement of

the lease term. The initial lease term is ten years from the rent commencement date and includes two optional five year extensions.

We believe that our existing and planned facilities will be adequate to meet our planned needs and that our leases can be renewed, or suitable alternative spaces will be available in the future, on commercially reasonable terms.

Employees

As of July 9, 2018, we had 44 employees, including eight who hold Ph.D. or M.D. degrees. We had 28 employees engaged in research and development; our remaining employees are management or administrative staff. None of our employees is subject to a collective bargaining agreement. We believe that we have good relations with our employees.

Research and development

Our research and development expenses were approximately $6.9 million and $13.5 million for the years ended March 31, 2017 and 2018, respectively.

Legal proceedings

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

Management

Executive officers and directors

The following table sets forth the names and positions of our executive officers and directors, and their ages as of July 9, 2018:

Name	Age	Position(s)
Executive Officers:		
Robert Coffin, Ph.D.	53	President, Chief Executive Officer and Director
Philip Astley-Sparke	46	Executive Chairman, Secretary, Treasurer and Director
Colin Love, Ph.D.	60	Chief Operating Officer
Pamela Esposito, Ph.D.	44	Chief Business Officer
Howard Kaufman, M.D.	57	Chief Medical Officer
Non-Management Directors:		
Kapil Dhingra M.B.B.S.[(1)(2)]	58	Director
Hyam Levitsky, M.D.	60	Director
Jason Rhodes[(2)(3)]	48	Director
Joseph Slattery[(1)(2)]	53	Director
Sander Slootweg[(1)]	49	Director
Otello Stampacchia, Ph.D.[(3)]	49	Director
Dieter Weinand	57	Director

(1) Member of the audit committee.

(2) Member of the compensation committee.

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

Biographies

Dr. Robert Coffin is one of our co-founders and has served as our President and Chief Executive Officer since our formation in 2015. From 2013 to 2015, Dr. Coffin served as a consultant for a number of biotechnology companies. From 2011 to 2013, Dr. Coffin served as Vice President of Global Development at Amgen. In 1999, Dr. Coffin co-founded BioVex, a spin out from his research group at University College London. Dr. Coffin served as the Chief Technology Officer of BioVex until it was acquired by Amgen in 2011. During his time at BioVex, Dr. Coffin invented all BioVex products and oversaw all research and clinical development, including bringing T-Vec into two pivotal Phase 3 clinical trials. Dr. Coffin was awarded a Ph.D. in Virology from Imperial College London prior to his move to University College London in 1991. Dr. Coffin is qualified to serve on our board of directors due to his prior experience developing an oncolytic immunotherapy and his extensive knowledge of our company based on his role as co-founder and President and Chief Executive Officer.

Philip Astley-Sparke is one of our co-founders and has served as our Executive Chairman since our formation in 2015. Since 2016, Mr. Astley-Sparke has served as Chairman of uniQure N.V., a Nasdaq—listed gene therapy company. From 2013 to 2015, Mr. Astley-Sparke served as uniQure N.V.'s President of U.S. operations, where he established its U.S. infrastructure. Mr. Astley-Sparke served as Vice President and General Manager at Amgen until December 2011, following Amgen's acquisition of BioVex in March 2011. Mr. Astley-Sparke was President and Chief Executive Officer of BioVex. Prior to BioVex, Mr. Astley-Sparke was a healthcare investment banker at Chase H&Q and qualified as a Chartered Accountant with Arthur Andersen LLP. Mr. Astley-Sparke has been a Venture Partner at Forbion Capital Partners, a venture capital fund, since May 2012 and serves as Chairman of the Board of Oxyrane Limited, a biotechnology company. Mr. Astley-Sparke received a B.Sc. in Cellular and Molecular Pathology from Bristol University. Mr. Astley-

Sparke is qualified to serve on our board of directors because of his extensive knowledge of our company based on his role as co-founder and Executive Chairman and his extensive financial and leadership experience.

Dr. Colin Love has served as our Chief Operating Officer since October 2015 and has been a member of the board of directors of Replimune Limited since July 2017. Following the acquisition of BioVex by Amgen in 2011, Dr. Love remained at Amgen as Vice President of Clinical Operations, working on T-Vec until it was approved in 2015. Since 2014, Dr. Love has also provided consulting support to biotechnology companies through Clove Consulting Ltd. From 2000 until it was acquired in 2011, Dr. Love served as Senior Vice President of Product Development at BioVex. Dr. Love received a B.Sc. in Biochemistry and a Ph.D. in Biochemistry from Glasgow University.

Dr. Pamela Esposito has served as our Chief Business Officer since November 2015. Previously, she was Chief Business Officer at Ra Pharmaceuticals, Inc., or Ra, from 2013 to 2015. As a member of Ra's senior management team, Dr. Esposito played a leadership role in strategy, helping Ra transform from a discovery platform to a clinical-stage company. Prior to Ra, from 2010 to 2011, she was Vice President of Business Development at BioVex. Dr. Esposito earned a Ph.D. in Pharmacology from Tufts University School of Medicine in 2002 and a B.A. in Biochemistry/Molecular Biology from Dartmouth College.

Dr. Howard L. Kaufman joined us as Chief Medical Officer in September 2017. He has been the Editor-In-Chief of the Journal of Targeted Therapies in Cancer and a Senior Associate Editor at the Journal of Translational Medicine since 2007. Most recently, Dr. Kaufman was Associate Director for Clinical Science of the Rutgers Cancer Institute of New Jersey from 2014 to 2017. He previously was a leading academic in the study of tumor immunotherapy and the optimization of viral vectors for the treatment of cancer from 1997 to 2017. He was President of the Society for Immunotherapy of Cancer from 2014 to 2016. He previously was the Cancer Center Director and Associate Dean of Rush University Medical Center from 2009 to 2013. Dr. Kaufman has published over 400 peer-reviewed scientific papers, books, and review articles and serves on the editorial board of the Journal for Immunotherapy of Cancer. Dr. Kaufman received his Medical Degree from Loyola University in 1986, completed General Surgery residency at Boston University and fellowship training in Tumor Immunology and Surgical Oncology at the National Cancer institute.

Dr. Kapil Dhingra has been a member of our board of directors since July 2017. Dr. Dhingra currently serves as the Managing Member of KAPital Consulting, LLC, a healthcare consulting firm that he founded in 2008. Dr. Dhingra also currently serves on the boards of directors of Median Technologies Inc., Five Prime Therapeutics Inc., and Autolus Therapeutics plc, a Nasdaq-listed biopharmaceutical company. Dr. Dhingra previously served as a member of the board of directors of Micromet, Inc., until its acquisition by Amgen, and YM Biosciences Inc., until its acquisition by Gilead Sciences, Inc. From 1999 to 2008, Dr. Dhingra worked at Roche where he served as Vice President, Head of the Oncology Disease Biology Leadership Team and Head of Oncology Clinical Development. From 2000 to 2008, he held a Clinical Affiliate appointment at Memorial Sloan Kettering Cancer Center. From 1996 to 1999, Dr. Dhingra worked at Eli Lilly & Co., or Eli Lilly, where he served as Senior Clinical Research Physician. Dr. Dhingra also served as a Clinical Associate Professor of Medicine at the Indiana University School of Medicine from 1997 to 1999. Prior to Eli Lilly, Dr. Dhingra was a member of the faculty of M.D. Anderson Cancer Center from 1989 to 1996. Dr. Dhingra received his M.B.B.S. from the All India Institute of Medical Sciences in New Delhi, India. He completed his residency in Internal Medicine at Lincoln Medical and Mental Health Center and New York Medical College and completed his fellowship in Hematology and Oncology at Emory University School of Medicine. Dr. Dhingra is qualified to serve on our board of directors due to his significant experience as a healthcare consultant and as a senior officer of Roche and Eli Lilly.

Dr. Hyam Levitsky has been a member of our board of directors since May 2018. Dr. Levitsky is currently an Adjunct Professor of Oncology, Medicine, and Urology at The Johns Hopkins University School of Medicine and the Sidney Kimmel Comprehensive Cancer Center in Baltimore, MD where he began as an Assistant Professor of Oncology in 1991, rose to be a Professor in 2002, and has been an Adjunct Professor since 2011. At Johns Hopkins, Dr. Levitsky served as Scientific Director of the George Santos Bone Marrow Transplant Program from 2005 to 2011. He is a founding member of the Executive Council of the Cancer Immunotherapy Consortium of the Cancer Research Institute where he has served since 2005. Dr. Levitsky is an active member of the American Association of Cancer Research and the American Society of Hematology, and advises the FDA on cancer immunotherapy issues. Previously, Dr. Levitsky served as Executive Vice President and Chief Scientific Officer at Juno Therapeutics, Inc. from 2015 to 2018 and was Head of Cancer Immunotherapy Experimental Medicine at Roche from 2011 to 2015. He served on the External Scientific Advisory Board of the Pasteur Institute's Center for Human Immunology from 2008 to 2010. Dr. Levitsky holds a number of honors including being named a Stohlman Scholar by the Leukemia and Lymphoma Society in 2002, and was elected as a member of the American Society for Clinical Investigation in 2002. He was previously an Assistant Chief of Service from 1987 to 1988 and Senior Clinical Fellow from 1988 to 1991 at The Johns Hopkins Hospital and The Johns Hopkins Oncology Center, respectively. Dr. Levitsky received a B.S. from the University of Pennsylvania School of Engineering and Applied Science in 1980 and an M.D. from The Johns Hopkins School of Medicine in 1984. Dr. Levitsky is qualified to serve on our board of directors because of his experience in management roles at life sciences companies and extensive academic and professional background in the fields of oncology and immunology.

Mr. Jason Rhodes has been a member of our board of directors since September 2015 and a Partner at Atlas Ventures since 2014. He has been a Founder and Chairman of Generation Bio, Co. since 2016 and a Founder, Chairman and currently acting Chief Executive Officer of Disarm Therapeutics, Inc. since 2016. He has been a member of the board of directors of Gemini Therapeutics, Inc. since 2016, Accent Therapeutics, Inc. since 2017, and Bicycle Therapeutics Limited since 2015. From 2010 to 2014, Mr. Rhodes was at Epizyme, Inc., where he most recently served as President and Chief Financial Officer. He led business development at Alnylam from 2007 to 2010. Mr. Rhodes obtained a B.A. from Yale University in 1991 and an M.B.A. from the Wharton School of the University of Pennsylvania in 1996. Mr. Rhodes is qualified to serve on our board of directors based on his extensive leadership experience, his biotechnology company board experience and his experience investing in life science companies.

Mr. Joseph Slattery has been a member of our board of directors since October 2017. He has served as Executive Vice President and Chief Financial Officer of TransEnterix, Inc. since 2013. From 2010 to 2013, Mr. Slattery served as Executive Vice President and Chief Financial Officer at Baxano Surgical Inc. Previously, from 1996 to 2007, among other roles, he served as Chief Financial Officer and Senior Vice President of Finance and Information Systems of Digene Corp., which was acquired by Qiagen, N.V. Mr. Slattery has also been a member of the boards of directors of Exosome Diagnostics, Inc. since 2013, CVRx Inc. since 2008, and Micromet, Inc. from 2007 to 2012, when it was acquired by Amgen. He earned his Bachelor's Degree in Accountancy from Bentley University in 1987 and is a certified public accountant. Mr. Slattery is qualified to serve on our board of directors based on his experience in public accounting and financial expertise.

Mr. Sander Slootweg has been a member of our board of directors since 2015. Mr. Slootweg co-founded Forbion Capital Partners in 2006 and has served as one of its Managing Partners since that time. Mr. Slootweg has served on the boards of Forbion's portfolio companies, NorthSea Therapeutics, Inc., since 2017, Oxyrane Limited since 2011 and Xention Discovery Ltd. and Ario Pharma Ltd. since 2006. Mr. Slootweg served on the boards of uniQure N.V. from 2012 to 2014, Fovea Pharmaceutics S.A. from

2007 until its sale to Sanofi S.A. in 2009, Argenta Discovery Ltd. from 2001 until its sale to Galapagos N.V. in 2010, BioVex from 2003 until its sale to Amgen in 2011, Alantos Pharmaceuticals, Inc. from 2005 to until its sale to Amgen in 2007, Impella Cardiosystems AG from 2001 to 2003 until its sale to Abiomed, Inc. in 2005, and Glycart AG from 2003 until its sale to F. Hoffmann-La Roche & Co., or Roche, in 2005. Mr. Slootweg has also acted as the Chairman of the Board of AMT N.V., Belgium from 2006 to 2012 and as the Chairman of the Board of Dezima Pharma B.V. from 2012 until its sale to Amgen in 2015. Before co-founding Forbion, he was an Investment Director at ABN AMRO Capital Life Sciences from 1999 to 2006. Mr. Slootweg holds degrees in Business and Financial Economics from the Free University of Amsterdam and Business Administration from Nijenrode University, The Netherlands. Mr. Slootweg is qualified to serve on our board of directors because of his extensive leadership experience, his biotechnology company board experience and his experience investing in life science companies.

Dr. Otello Stampacchia has been a member of our board of directors since May 2015. Since 2006, Dr. Stampacchia has been a managing member at Omega Fund Management. Previously, Dr. Stampacchia was in charge of life sciences direct investments at AlpInvest Partners B.V. from 2001 to 2003. Before AlpInvest Partners B.V., from 2000 to 2001, Dr. Stampacchia was the portfolio manager of the Lombard Odier Immunology Fund. Previously, Dr. Stampacchia was a member of the healthcare corporate finance and mergers and acquisitions team at Goldman Sachs Group, Inc. from 1997 to 2000. Before joining Goldman Sachs Group, Inc., Dr. Stampacchia helped co-found the healthcare investment activities at Index Securities, now Index Ventures, Inc. Dr. Stampacchia is currently a member of the boards of directors of Median Technologies S.A., Trevi Therapeutics, Inc., and Gossamer Bio, Inc. and has served in such roles since 2014, 2017, and 2018, respectively. Dr. Stampacchia received a Ph.D. in Molecular Biology from the University of Geneva, Switzerland in 1997, and a Ph.D. in Biotechnology in 1998. Mr. Stampacchia is qualified to serve on our board of directors because of his extensive leadership experience, his biotechnology company board experience and his experience investing in life science companies.

Mr. Dieter Weinand has been a member of our board of directors since June 2018. Since 2014, Mr. Weinand has been President, Pharmaceutical Division at Bayer AG. From 2013 to 2014 Mr. Weinand was President, Global Commercialization at Otsuka Pharmaceutical Co., Ltd. and from 2010 to 2013 Mr. Weinand was President, Primary Care and Asia-Pacific Region at Pfizer Inc. From 2001 to 2010, Mr. Weinand served as President, Senior Vice President, and Vice President of BMS. Prior to joining BMS, Mr. Weinand was Senior Vice President at F.H. Faulding, Inc. from 2000 to 2001, Managing Director, Director, Vice President, and Senior Director at Warner-Lambert Company, which was acquired by Pfizer Inc. in 2000, during the period from 1994 to 2000, Vice President at Pharmos Corporation during 1994, and Director, Area Business Operations Coordinator, and International Product Manager at Lederle International during the period from 1990 to 1994. Mr. Weinand has been a member the board of directors of Bayer AG since 2013 and was previously a member of the board of directors of HealthPrize Technologies LLC from 2014 to 2018. Mr. Weinand received a M.S. in Pharmacology and Toxicology from Long Island University in 1987 and a B.A. from Concordia College in 1982. Mr. Weinand is qualified to serve on our board of directors because of his extensive leadership experience, his biotechnology company board experience and his experience in management roles at life sciences companies.

Composition of our board of directors

Our board of directors currently consists of nine directors, each of whom serves pursuant to the board composition provisions of our amended and restated voting agreement which is described under "Certain relationships and related party transactions." These board composition provisions will terminate upon the completion of this offering. Upon the termination of these provisions, there will be no further contractual

obligations regarding the election of our directors. Our nominating and corporate governance committee and our board of directors may therefore consider a broad range of factors relating to the qualifications and background of nominees, which may include diversity, which is not only limited to race, gender or national origin. We have no formal policy regarding board diversity. Our nominating and corporate governance committee's and our board of directors' priority in selecting board members is identification of persons who will further the interests of our stockholders through their established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business, understanding of the competitive landscape and professional and personal experiences and expertise relevant to our growth strategy. Our directors hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

Our board of directors consists of nine members. Our board of directors has determined that Mr. Rhodes, Mr. Slootweg, Dr. Stampacchia, Dr. Dhingra, Mr. Slattery, Mr. Weinand and Dr. Levitsky are independent, including for purposes of the rules of Nasdaq and relevant federal securities laws and regulations. Nasdaq 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 Nasdaq 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.

Our amended and restated certificate of incorporation and amended and restated bylaws that will become effective immediately prior to the completion of this offering will provide that our board of directors will be divided into three classes, Class I, Class II and Class III, with members of each class serving staggered three-year terms. Upon the completion of this offering, the members of the classes will be divided as follows

- our Class I directors will be Mr. Astley-Sparke, Dr. Dhingra, and Mr. Slattery, and their terms will expire at the annual meeting of stockholders to be held in 2019;
- our Class II directors will be Mr. Rhodes, Mr. Slootweg, and Dr. Stampacchia, and their terms will expire at the annual meeting of stockholders to be held in 2020; and
- our Class III directors will be Dr. Coffin, Dr. Levitsky and Mr. Weinand, and their terms will expire at the annual meeting of stockholders to be held in 2021.

Upon the expiration of the term of a class of directors, directors in that class will be eligible to be elected for a new three-year term at the annual meeting of stockholders in the year in which their term expires.

Board committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter adopted by our board of directors that became effective upon the effectiveness of the registration statement of which this prospectus is a part. The composition and functioning of all of our committees is in compliance with all applicable requirements of the Sarbanes-Oxley Act, Nasdaq and the SEC rules and regulations. The initial

composition and responsibilities of each committee are described below. Members will serve on these committees until their resignation or until otherwise determined.

Audit committee

Our audit committee provides oversight of our accounting and financial reporting process, the audit of our financial statements and our internal control function. Among other matters, the audit committee is responsible for the following:

- assisting the board of directors in oversight of the independent auditors' qualifications, independence and performance;
- the engagement, retention and compensation of the independent auditors;
- reviewing the scope of the annual audit and reviewing and discussing with management and the independent auditors the results of the annual audit and the review of our quarterly financial statements, including the disclosures in our annual and quarterly reports filed with the SEC;
- reviewing our risk assessment and risk management processes;
- reviewing policies and procedures with respect to our related party transactions policy;
- conducting an annual self-evaluation process;
- establishing procedures for receiving, retaining and investigating complaints received by us regarding accounting, internal accounting controls or audit matters; and
- approving audit and permissible non-audit services provided by our independent auditor.

The members of our audit committee are Kapil Dhingra, Sander Slootweg and Joseph Slattery, who serves as the chair of the committee. All members of our audit committee meet the requirements for financial literacy under the applicable rules and regulations of the SEC and Nasdaq. Our board of directors has determined that Joseph Slattery is an audit committee financial expert as defined under the applicable rules of the SEC and has the requisite financial sophistication as defined under the applicable rules and regulations of Nasdaq. Dr. Dhingra and Mr. Slattery, members of our audit committee, are independent directors as defined under the applicable rules and regulations of the SEC and Nasdaq. Within twelve months of the completion of this offering, we expect Mr. Weinand to replace Mr. Slootweg as a member of the audit committee, at which time all of the members of our audit committee will be independent directors as defined under the applicable rules and regulations of the SEC and Nasdaq.

Compensation committee

Our compensation committee has adopted and currently administers the compensation policies, plans and benefit programs for our executive officers and all other members of our executive team. Our compensation committee is also responsible for making recommendations regarding non-employee director compensation to the full board of directors. In addition, among other things, our compensation committee will evaluate annually, in consultation with the board of directors, the performance of our chief executive officer, review and approve corporate goals and objectives relevant to compensation of our chief executive officer and other executives and evaluate the performance of these executives in light of those goals and objectives. Our compensation committee has adopted and currently administers our equity compensation plans. Jason Rhodes, Joseph Slattery and Kapil Dhingra serve on the compensation committee, which is

chaired by Kapil Dhingra. All of the members of our compensation committee are independent under the applicable rules and regulations of the SEC and Nasdaq.

Nominating and corporate governance committee

Our nominating and corporate governance committee is responsible for, among other things, making recommendations regarding corporate governance, the composition of our board of directors, the identification, evaluation and nomination of director candidates and the structure and composition of committees of our board of directors. In addition, our nominating and corporate governance committee oversees our corporate governance guidelines, approves our committee charters, oversees compliance with our code of business conduct and ethics and contributes to succession planning. Jason Rhodes, Otello Stampacchia and Hyam Levitsky serve on the nominating and corporate governance committee, which is chaired by Jason Rhodes. All of the members of our nominating and corporate governance committee are independent under the applicable rules and regulations of Nasdaq.

Compensation committee interlocks and insider participation

None of the members of our compensation committee is or has at any time during the past year been one of our officers or employees. None of our executive officers currently serves or in the past year has served as a member of our 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.

Board observer rights

We are a party to an amended and restated investors' rights agreement with certain of our investors. Under this agreement, Bain Capital Life Science Fund, L.P. has the right to appoint one person to attend board and committee meetings from time to time in a nonvoting observer capacity. Certain provisions of the amended and restated investors' rights agreement, including the board observer right described above, will terminate immediately prior to the completion of the offering. See "Certain relationships and related party transactions" for further information concerning the amended and restated investors' rights agreement.

Role of the board in risk oversight

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks, including risks relating to our financial condition, development and commercialization activities, operations, strategic direction and intellectual property, in each case as more fully discussed under "Risk factors" in this prospectus. Management is responsible for the day-to-day management of the risks we face, while our board of directors, as a whole and through committees, has responsibility for the oversight of risk management. Our board of directors performs this oversight role by using several different levels of review. In connection with its reviews of the operations and corporate functions of our company, our board of directors addresses the primary risks associated with those operations and corporate functions. In addition, our board of directors reviews the risks associated with our company's business strategies periodically throughout the year as part of its consideration of undertaking any such business strategies.

Mr. Astley-Sparke serves as executive chairman of our board of directors. The role of the board of directors in overseeing the management of our risks is conducted primarily through committees of the board of directors, as disclosed in the descriptions of each of the committees above and in the charters of each such committee. The full board of directors (or the appropriate board committee in the case of risks

that are under the purview of a particular committee) discusses with management our major risk exposures, the potential impact on us, and the steps we take to manage them. When a board committee is responsible for evaluating and overseeing the management of a particular risk or risks, the chairperson of the relevant committee reports on the discussion to the full board of directors during the committee reports portion of the next board meeting. This enables the board of directors and its committees to coordinate the risk oversight role, particularly with respect to risk interrelationships.

Code of business conduct and ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A current copy of the code is posted on the Corporate Governance section of our website, which is located at https://ir.replimune.com/corporate-governance/governance-documents. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

Executive and director compensation

The compensation of our chief executive officer and our other executive officers identified in the summary compensation table below, who we refer to as the named executive officers, has consisted of a combination of base salary, bonuses and long-term incentive compensation in the form of stock options. In preparing to become a public company, we have begun a thorough review of all elements of the compensation of our executives, including our compensation philosophy and the function and design of our long-term incentive compensation programs. We have begun and expect to continue to evaluate the existing executive compensation program to ensure our program is competitive with the companies with which we compete for executive talent and is appropriate for a public company.

Summary compensation table

The following table presents compensation awarded, paid to or accrued for our named executive officers for services rendered during our fiscal year 2018.

Name & Principal Position	Year	Salary ($)	Bonus ($)[1]	Option awards ($)[2]	All Other compensation ($)	Total ($)
Robert Coffin, Ph.D. *President, Chief Executive Officer and Director*	2018	$ 389,478	$ 146,817	$ 592,000	$ —	$ 1,128,295
Colin Love, Ph.D. *Chief Operating Officer*	2018	$ 311,834[3]	$ 101,784[3]	$ 277,500	$ —	$ 691,118
Pamela Esposito, Ph.D. *Chief Business Officer*	2018	$ 264,633	$ 86,815	$ 249,750	$ —	$ 601,198
Philip Astley-Sparke *Executive Chairman, Secretary, Treasurer and Director*	2018	$ 254,687	$ 83,765	$ 166,500	$ —	$ 504,952

(1) The amounts reported in this column represent bonuses based upon the achievement of company and individual performance objectives for the year ended March 31, 2018, which we paid in April 2018.

(2) The amounts reported in this column reflect the full grant date fair value for awards granted during fiscal year 2018. The grant date fair value was computed in accordance with Accounting Standards Codification Topic 718, Compensation—Stock Compensation. The assumptions we used in valuing options are described in Note 10 to our audited consolidated financial statements appearing at the end of this prospectus.

(3) Amounts presented for Dr. Love are based on an assumed conversion ratio of British pounds to dollars of 1.4015, which was the exchange rate in effect as of March 31, 2018.

Narrative disclosure to summary compensation table

Employment arrangements

Set forth below are descriptions of the employment agreements that we have entered into with each of our named executive officers, including descriptions of our named executive officers' base salary, target annual bonus opportunity and standard benefit plan participation.

Robert Coffin

Effective as of October 1, 2015, Replimune, Inc. entered into an employment agreement with Dr. Coffin for the position of Chief Executive Officer of Replimune. Dr. Coffin currently receives an annual base salary of approximately $500,000. In addition, pursuant to his employment agreement, Dr. Coffin is eligible for annual performance bonuses. Dr. Coffin's annual target bonus is currently up to 50% of his annual base

salary. Dr. Coffin is eligible to participate in our employee benefit plans, practices and programs on a basis which is no less favorable than is provided to our other similarly situated executives.

Dr. Coffin's employment agreement further provides that in the event his employment is terminated without "cause," as defined in his employment agreement, or he terminates his employment for "good reason," as defined in his employment agreement, and subject to customary conditions, including his execution of an acceptable release, Dr. Coffin is entitled to receive 12 months of base salary and monthly cash payments equal to the costs of COBRA health continuation for the earlier of six months or until Dr. Coffin becomes eligible under another employer's group coverage.

In addition, in the event of a change in control of our business, if, within 24 months following such change of control, Dr. Coffin is terminated without "cause" or he has terminated his employment for "good reason," Dr. Coffin will be entitled to receive any accrued but unpaid compensation, together with a lump sum payment equal to the sum of Dr. Coffin's then current base salary or, if greater, the base salary for the year immediately preceding, subject to customary conditions, including his execution of an acceptable release. If an excise tax under Section 4999 of the Code is imposed on the payments and benefits payable to Dr. Coffin in connection with a change in control, Dr. Coffin will be entitled to a tax gross-up payment for such excise taxes.

Colin Love

Effective as of September 16, 2015, Replimune Limited entered into an employment agreement with Dr. Love for the position of Chief Operating Officer of Replimune. Dr. Love currently receives an annual base salary of approximately $335,000. In addition, pursuant to his employment agreement, Dr. Love is eligible for annual performance bonuses. Dr. Love's annual target bonus is currently up to 35% of his annual base salary. Dr. Love is eligible to participate in our employee benefit plans, practices and programs.

Dr. Love's employment agreement further provides that in the event he is terminated, Dr. Love may be entitled to receive payment in lieu of receiving six months' notice of termination in an amount equal to his basic annual salary, as at the date of termination, which he would have been entitled to receive during the six month notice period less income tax and National Insurance contributions, and subject to customary conditions, the "payment in lieu".

Dr. Love's employment agreement further provides that in the event his employment is terminated without "cause," as defined in his employment agreement, or he terminates his employment for "good reason," as defined in his employment agreement, Dr. Love is entitled to be paid a sum equal to twelve months of his "fixed annual salary," as defined in his employment agreement, less any "payment in lieu," payable in twelve equal monthly installments following his termination.

In addition, in the event of a change in control of our business, if, within twenty-four months following such change in control, Dr. Love is terminated without "cause" or he has terminated his employment for "good reason," Dr. Love will be entitled to receive a sum equal to twelve months of his "fixed annual salary," less any "payment in lieu," payable within thirty days following his termination.

Pamela Esposito

Effective as of November 1, 2015, Replimune, Inc. entered into an employment agreement with Dr. Esposito for the position of Chief Business Officer of Replimune. Dr. Esposito currently receives an annual base salary of approximately $350,000. In addition, pursuant to her employment agreement, Dr. Esposito is eligible for annual performance bonuses. Dr. Esposito's annual target bonus is currently up to 35% of her

annual base salary. Dr. Esposito is eligible to participate in our employee benefit plans, practices and programs on a basis which is no less favorable than is provided to our other similarly situated executives.

Dr. Esposito's employment agreement further provides that in the event her employment is terminated without "cause," as defined in her employment agreement, or she terminates her employment for "good reason," as defined in her employment agreement, and subject to customary conditions, including her execution of an acceptable release, Dr. Esposito is entitled to receive six months of base salary and monthly cash payments equal to the costs of COBRA health continuation for the earlier of six months or until Dr. Esposito becomes eligible under another employer's group coverage.

In addition, in the event of a change in control of our business, if, within twenty-four months following such change of control, Dr. Esposito is terminated without "cause" or she has terminated her employment for "good reason," Dr. Esposito will be entitled to receive any accrued but unpaid compensation, together with a lump sum payment equal to the sum of the Dr. Esposito's then current base salary or, if greater, the base salary for the year immediately preceding, and one hundred percent of her annual bonus, subject to customary conditions, including her execution of an acceptable release. If an excise tax under Section 4999 of the Code is imposed on the payments and benefits payable to Dr. Esposito in connection with a change in control, Dr. Esposito will be entitled to a tax gross-up payment for such excise taxes.

Philip Astley-Sparke

Effective as of October 1, 2015, Replimune, Inc. entered into an employment agreement with Mr. Astley-Sparke for the position of Executive Chairman of Replimune. Mr. Astley-Sparke currently spends 80% of his time working for Replimune and receives an annual base salary of approximately $400,000. In addition, pursuant to his employment agreement, Mr. Astley-Sparke is eligible for annual performance bonuses. Mr. Astley-Sparke's annual target bonus is currently up to 50% of his annual base salary. Mr. Astley-Sparke is eligible to participate in our employee benefit plans, practices and programs on a basis which is no less favorable than is provided to our other similarly situated executives.

Mr. Astley-Sparke's employment agreement further provides that in the event his employment is terminated without "cause," as defined in his employment agreement, or he terminates his employment for "good reason," as defined in his employment agreement, and subject to customary conditions, including his execution of an acceptable release, Mr. Astley-Sparke is entitled to receive 12 months of base salary and monthly cash payments equal to the costs of COBRA health continuation for the earlier of six months or until Mr. Astley-Sparke becomes eligible under another employer's group coverage.

In addition, in the event of a change in control of our business, if, within 24 months following such change of control, Mr. Astley-Sparke is terminated without "cause" or he has terminated his employment for "good reason," Mr. Astley-Sparke will be entitled to receive any accrued but unpaid compensation, together with a lump sum payment equal to the sum of Mr. Astley-Sparke's then current base salary or, if greater, the base salary for the year immediately preceding, subject to customary conditions, including his execution of an acceptable release. If an excise tax under Section 4999 of the Code is imposed on the payments and benefits payable to Mr. Astley-Sparke in connection with a change in control, Mr. Astley-Sparke will be entitled to a tax gross-up payment for such excise taxes.

Pursuant to their employment agreements, our named executive officers are subject to standard covenants of confidentiality and nondisclosure, assignment of intellectual property work product and post-termination noncompetition and non-solicitation of employees, consultants and customers.

Bonuses

In addition to base salaries, our named executive officers are eligible to receive annual performance-based cash incentives, which are designed to motivate our executives to achieve defined annual corporate goals and to reward our executives for their contributions towards the achievement of these goals. The annual performance-based incentive each named executive officer was eligible to receive in fiscal year 2018 was generally based on the extent to which the officer achieved the corporate goals and individual objectives that our board of directors established at the beginning of fiscal year 2018. After the end of fiscal year 2018, our board of directors reviewed performance against each goal and objective and determined the extent to which each goal and objective was achieved.

In our fiscal year 2018, Dr. Coffin was eligible to receive a target bonus of up to 40% of his base salary, while each of Dr. Love, Dr. Esposito and Mr. Astley-Sparke was eligible to receive a target bonus of up to 35% of their respective base salary. Our board of directors reviewed the fiscal year 2018 corporate goals and the individual objectives of each named executive officer and determined that on an overall basis, significant progress had been made towards achieving all of those goals. In recognition of these achievements and the efforts of each executive, the committee awarded each of our named executive officers eligible for performance bonuses a portion of their target bonus opportunity for fiscal year 2018. For fiscal year 2018, Dr. Coffin, Dr. Love, Dr. Esposito and Mr. Astley-Sparke were paid bonuses of $146,817, $101,784, $86,815 and $83,756, respectively.

Pension benefits

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or retirement plan during fiscal year 2017, other than pursuant to the plans described under "—Employee benefit and stock plans—401(k) plan" or "—Employee benefit and stock plans—U.K. pension contribution plan."

Non-qualified deferred compensation

Our named executive officers did not participate in, or earn any benefits under, a non-qualified deferred compensation plan during fiscal year 2017.

Outstanding equity awards at fiscal year end

The following table sets forth information regarding outstanding equity awards held by our named executive officers as of March 31, 2018.

	Option awards				Stock awards	
Name	Number of securities underlying unexercised options (#) exercisable	Number of securities underlying unexercised options (#) unexercisable	Option exercise price ($)	Option expiration date	Number of securities that have not vested	Market value of securities that have not vested
Robert Coffin, Ph.D.	—	318,299(1)	$ 3.30	July 26, 2027	—	—
Colin Love, Ph.D.	—	149,203(1)	$ 3.30	July 26, 2027	—	—
Pamela Esposito, Ph.D.	124,332	(2) 24,871(3)	$ 1.01	November 1, 2025	—	—
	102,168	93,994(4)	$ 1.75	March 1, 2026	—	—
	—	134,281(1)	$ 3.30	July 26, 2027	—	—
Philip Astley-Sparke	—	89,521(1)	$ 3.30	July 26, 2027	—	—

(1) 25% of the shares underlying this stock option vest on July 26, 2018 and the remainder of the shares underlying this stock option vest in 36 equal monthly installments thereafter.

(2) The shares underlying this stock option vest in two equal installments of 12,433 on June 30, 2018 and September 30, 2018.

(3) The shares underlying this stock option were granted under the Replimune Limited 2015 Enterprise Management Incentive Share Option Plan, or the 2015 Plan, which was terminated in July 2017. Upon termination of the 2015 Plan, all awards issued thereunder were cancelled and replaced with awards issued under our 2017 Plan.

(4) The shares underlying this stock option vest in 23 equal monthly installments.

Employee benefit and stock plans

2018 Omnibus Incentive Compensation Plan

Purpose and types of grants

The purpose of our 2018 Plan is to attract and retain employees, non-employee directors and consultants, and advisors. Our 2018 Plan provides for the issuance of incentive stock options, non-qualified stock options, stock awards, stock units, stock appreciation rights and other stock-based awards. Our 2018 Plan is intended to provide an incentive to participants to contribute to our economic success by aligning the economic interests of participants with those of our stockholders.

Administration

Our 2018 Plan will be administered by our compensation committee, and our compensation committee will determine all of the terms and conditions applicable to grants under our 2018 Plan. Our compensation committee will also determine who will receive grants under our 2018 Plan and the number of shares of common stock that will be subject to grants. Our compensation committee may delegate authority under the 2018 Plan to one or more subcommittees as it deems appropriate. Subject to compliance with applicable law and the applicable stock exchange rules, our board of directors, in its discretion, may perform any action of our compensation committee under the 2018 Plan. Subject to compliance with applicable law and applicable stock exchange requirements, the compensation committee (or our board of directors or a subcommittee, as applicable) may delegate all or part of its authority to our chief executive officer, as it deems appropriate, with respect to grants to employees or key advisors who are not executive officers or directors under Section 16 of the Exchange Act. Our compensation committee, our board of directors, any subcommittee or the chief executive officer, as applicable, that has authority with respect to a specific grant will be referred to as "the committee" in this description of the 2018 Plan.

Shares subject to the plan

Subject to adjustment as described below, the maximum aggregate number of shares of common stock that may be issued or transferred under the 2018 Plan is 3,617,968 shares, which is equal to the sum of (i) 3,486,118 shares of our common stock, plus (ii) the number of shares of our common stock reserved for issuance under the 2017 Plan that remain available as of the effective date of the 2018 Plan (not to exceed 131,850 shares of our common stock). If any options or stock appreciation rights, including outstanding options and stock appreciation rights granted under our 2017 Plan (up to 2,520,247 shares), terminate, expire, or are canceled, forfeited, exchanged, or surrendered without having been exercised, or if any stock awards, stock units or other stock-based awards, including outstanding awards granted under our 2017 Plan, are forfeited, terminated, or otherwise not paid in full in shares of common stock, the shares of our common stock subject to such grants will again be available for purposes of our 2018 Plan. In addition, as of the first trading day of each fiscal year during the term of the 2018 Plan (excluding any extensions), an additional number of shares of our common stock equal to 4% of the total number of shares outstanding on the last trading day in the immediately preceding fiscal year (or such lesser amount as determined by our board of directors) will be added to the number of shares authorized under the 2018 Plan.

Subject to adjustment as described below, the aggregate number of shares of common stock that may be issued or transferred under the 2018 Plan pursuant to incentive stock options will not exceed the lesser of the maximum aggregate number of shares of common stock that may be issued or transferred under the Plan and 16,000,000 shares.

Shares of our common stock that are surrendered in payment of the exercise price of an option or stock appreciation right will not be available for issuance under the 2018 Plan. Shares of our common stock that are withheld in satisfaction of the withholding taxes, or surrendered for the payment of taxes, will not be available for issuance under the 2018 Plan. When stock appreciation rights are granted, the full number of shares subject to the stock appreciation rights will be considered issued under the 2018 Plan regardless of the number of shares issued upon exercise of the stock appreciation rights. If any grants are paid in cash, and not in shares of our common stock, any shares of our common stock subject to such grants will also be available for future grants. If we repurchase shares of our common stock on the open market with the proceeds from the exercise price we receive from options, the repurchased shares will not be available for issuance under the 2018 Plan. In addition, shares of our common stock issued under grants made pursuant to assumption, substitution, or exchange of previously granted awards of a company that we acquire will not reduce the number of shares of our common stock available under the 2018 Plan.

The maximum number of shares of our common stock that may be subject to options, stock appreciation rights, stock units and other stock-based awards made to employees, consultants and advisors under the 2018 Plan in any calendar year will not exceed 1,562,352 shares of our common stock in the aggregate. The maximum aggregate grant date value of shares of common stock subject to grants made to any non-employee member of our board of directors during any calendar year for services rendered as a non-employee member of our board, including any cash fees earned for services rendered as a non-employee member of our board of directors during the calendar year, will not exceed $750,000 in total value. For grants that are made to any non-employee member of our board of directors for services rendered as a non-employee member of our board of directors during the calendar year in which the non-employee member of the board of directors is first appointed to our board of directors, such grants taken together with any cash fees earned for services rendered as a non-employee member of our board of directors will not exceed $1,000,000 in total value. In determining these dollar limits, the value of grants will be calculated based on the grant date fair value of the grants for financial reporting purposes.

Adjustments

In connection with stock splits, stock dividends, recapitalizations, and certain other events affecting our common stock, the committee will make adjustments as it deems appropriate in the maximum number of shares of common stock reserved for issuance as grants; the maximum number and kind of shares for which any individual may receive grants in any year; the number and kind of shares covered by outstanding grants; the number and kind of shares that may be issued or transferred under our 2018 Plan; the price per share or market value of any outstanding grants; the exercise price of options; the base amount of stock appreciation rights; and the performance goals or other terms; and conditions as the committee deems appropriate.

Eligibility

All of our employees are eligible to receive grants under our 2018 Plan. In addition, our non-employee directors and key advisors who perform services for us are also eligible to receive grants under our 2018 Plan. The committee selects the employees, non-employee directors and key advisors who will receive grants.

Vesting

The committee determines the vesting and exercisability terms of awards granted under our 2018 Plan.

Options

Under our 2018 Plan, the committee will determine the exercise price of the options granted and may grant options to purchase shares of common stock in such amounts as it determines. The committee may grant options that are intended to qualify as incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended, or the Code, or non-qualified stock options, which are not intended to so qualify. Incentive stock options may only be granted to our employees. Anyone eligible to participate in our 2018 Plan may receive a grant of non-qualified stock options. The exercise price of a stock option granted under our 2018 Plan cannot be less than the fair market value of a share of our common stock on the date the option is granted. If an incentive stock option is granted to a 10% stockholder, the exercise price cannot be less than 110% of the fair market value of a share of our common stock on the date the option is granted. The aggregate number of shares of common stock that may be issued or transferred under the 2018 Plan pursuant to incentive stock options under Section 422 of the Code may not exceed 3,617,968 shares of common stock.

The exercise price for any option is generally payable in cash or check. In certain circumstances as permitted by the committee, the exercise price may be paid by the surrender of shares of our common stock with an aggregate fair market value on the date the option is exercised equal to the exercise price; by payment through a broker in accordance with procedures established by the Federal Reserve Board; by withholding shares of common stock subject to the exercisable option which have a fair market value on the date of exercise equal to the aggregate exercise price; or by such other method as the committee approves.

The term of an option cannot exceed ten years from the date of grant, except that if an incentive stock option is granted to a 10% stockholder, the term cannot exceed five years from the date of grant. In the event that on the last day of the term of a non-qualified stock option, the exercise is prohibited by applicable law, including a prohibition on purchases or sales of our common stock under our insider trading policy, the term of the non-qualified option will be extended for a period of 30 days following the end of the legal prohibition, unless the committee determines otherwise.

Except as provided in the grant instrument, an option may only be exercised while a participant is employed by or providing service to us. The committee will determine in the grant instrument under what circumstances and during what time periods a participant may exercise an option after termination of employment.

Stock appreciation rights

Under our 2018 Plan, the committee may grant stock appreciation rights, which may be granted separately or in tandem with any option. Stock appreciation rights granted with a non-qualified stock option may be granted either at the time the non-qualified stock option is granted or any time thereafter while the option remains outstanding. Stock appreciation rights granted with an incentive stock option may be granted only at the time the grant of the incentive stock option is made. The committee will establish the base amount of the stock appreciation right at the time the stock appreciation right is granted, which will be equal to or greater than the fair market value of a share of our common stock as of the date of grant.

If a stock appreciation right is granted in tandem with an option, the number of stock appreciation rights that are exercisable during a specified period will not exceed the number of shares of our common stock

that the participant may purchase upon exercising the related option during such period. Upon exercising the related option, the related stock appreciation rights will terminate, and upon the exercise of a stock appreciation right, the related option will terminate to the extent of an equal number of shares of our common stock. Generally, stock appreciation rights may only be exercised while the participant is employed by, or providing services to, us. When a participant exercises a stock appreciation right, the participant will receive the excess of the fair market value of the underlying common stock over the base amount of the stock appreciation right. The appreciation of a stock appreciation right will be paid in shares of our common stock, cash or both.

The term of a stock appreciation right cannot exceed ten years from the date of grant. In the event that on the last day of the term of a stock appreciation right, the exercise is prohibited by applicable law, including a prohibition on purchases or sales of our common A stock under our insider trading policy, the term of the stock appreciation right will be extended for a period of 30 days following the end of the legal prohibition, unless the committee determines otherwise.

Stock awards

Under our 2018 Plan, the committee may grant stock awards. A stock award is an award of our common stock that may be subject to restrictions as the committee determines. The restrictions, if any, may lapse over a specified period of employment or based on the satisfaction of pre-established criteria, in installments or otherwise, as the committee may determine. Except to the extent restricted under the grant instrument relating to the stock award, a participant will have all of the rights of a stockholder as to those shares, including the right to vote and the right to receive dividends or distributions on the shares. Dividends with respect to stock awards that vest based on performance shall vest if and to the extent that the underlying stock award vests, as determined by the committee. All unvested stock awards are forfeited if the participant's employment or service is terminated for any reason, unless the committee determines otherwise.

Stock units

Under our 2018 Plan, the committee may grant restricted stock units to anyone eligible to participate in our 2018 Plan. Restricted stock units are phantom units that represent shares of our common stock. Stock units become payable on terms and conditions determined by the committee and will be payable in cash or shares of our stock as determined by the committee. All unvested restricted stock units are forfeited if the participant's employment or service is terminated for any reason, unless the committee determines otherwise.

Other stock-based awards

Under our 2018 Plan, the committee may grant other types of awards that are based on, measured by, or payable to, anyone eligible to participate in our 2018 Plan in shares of our common stock. The committee will determine the terms and conditions of such awards. Other stock-based awards may be payable in cash, shares of our common stock, or a combination of the two.

Dividend equivalents

Under our 2018 Plan, the committee may grant dividend equivalents in connection with grants of stock units or other stock-based awards made under our 2018 Plan. Dividend equivalents entitle the participant to receive amounts equal to ordinary dividends that are paid on the shares underlying a grant while the grant is outstanding. The committee will determine whether dividend equivalents will be paid currently or accrued as contingent cash obligations. Dividend equivalents may be paid in cash, in shares of common

stock, or in a combination of the two. The committee will determine the terms and conditions of the dividend equivalent grants, including whether the grants are payable upon the achievement of specific performance goals. Dividend equivalents with respect to stock units or other stock-based awards that vest based on performance shall vest and be paid only if and to the extent that the underlying stock units or other stock-based awards vest and are paid as determined by the committee. No dividends or dividend equivalents will be granted in connection with stock options or stock appreciation rights.

Change of control

If we experience a change of control where we are not the surviving corporation (or survive only as a subsidiary of another corporation), all outstanding grants that are not exercised or paid at the time of the change of control will be assumed by, or replaced with grants that have comparable terms by, the surviving corporation (or a parent or subsidiary of the surviving corporation). If the surviving corporation does not assume or replace the outstanding grants with grants that have comparable terms, outstanding stock options and stock appreciation rights will automatically accelerate and become fully exercisable and the restrictions and conditions on outstanding stock awards, stock units, other stock-based awards and dividend equivalents will immediately lapse. However, if the vesting of such grants is based on performance (in whole or in part), the vesting terms applicable to such grants will be determined under the applicable grant instrument.

If the outstanding grants are assumed, or replaced with grants that have comparable terms by, the surviving corporation (or parent or subsidiary of the surviving corporation) and if the participant's employment or service is terminated without cause or by the participant for good reason (if applicable) upon or within 12 months following the change of control, the participant's outstanding grants shall become fully vested as of the date of such termination; provided that if the vesting of any such grants is based on performance (in whole or in part), the vesting terms applicable to such grants will be determined under the applicable grant instrument. The committee may provide for more beneficial vesting terms upon a termination of employment or service in connection with the change of control, as set forth in the applicable grant instrument or otherwise.

If there is a change of control and all outstanding grants are not assumed by, or replaced with grants that have comparable terms by, the surviving corporation, the committee may take any of the following action without the consent of any participant:

- pay participants, in an amount and form determined by the committee, in settlement of outstanding stock units, other stock based awards, cash awards, or dividend equivalents;

- require that participants surrender their outstanding stock options, stock appreciation rights or any other exercisable grant, in exchange for a payment by us, in cash or shares of our common stock, equal to the difference between the exercise price and the fair market value of the underlying shares of common stock; provided, however, if the per share fair market value of the common stock does not exceed the per share stock option exercise price or stock appreciation right base amount, as applicable, we will not be required to make any payment to the participant upon surrender of the stock option or stock appreciation right; or

- after giving participants an opportunity to exercise all of their outstanding stock options and stock appreciation rights, terminate any unexercised stock options and stock appreciation rights on the date determined by our compensation committee.

In general terms, a change of control under our 2018 Plan occurs if:

- a person, entity or affiliated group, with certain exceptions, acquires more than 50% of our then outstanding voting securities;
- we merge into another entity unless the holders of our voting shares immediately prior to the merger have at least 50% of the combined voting power of the securities in the merged entity or its parent;
- we merge into another entity and the members of the board of directors prior to the merger would not constitute a majority of the board of the merged entity or its parent;
- we sell or dispose of all or substantially all of our assets;
- our complete liquidation or dissolution; or
- a majority of the members of our board of directors is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the incumbent directors.

Deferrals

The committee may permit or require participants to defer receipt of the payment of cash or the delivery of shares of common stock that would otherwise be due to the participant in connection with a grant under our 2018 Plan. The committee will establish the rules and procedures applicable to any such deferrals, consistent with the requirements of Section 409A of the Code.

Withholding

All grants under the 2018 Plan are subject to applicable U.S. federal, including Federal Insurance Contributions Act, or FICA, state and local, foreign, or other tax withholding requirements. We may require participants or other persons receiving grants or exercising grants to pay an amount sufficient to satisfy such tax withholding requirements with respect to such grants, or we may deduct from other wages and compensation paid by us the amount of any withholding taxes due with respect to such grant.

The committee may permit or require that our tax withholding obligation with respect to grants paid in our common stock to be paid by having shares withheld up to an amount that does not exceed the participant's minimum applicable withholding tax rate for United States federal, including FICA, state and local tax liabilities, or as otherwise determined by the committee. In addition, the committee may, in its discretion, and subject to such rules as the committee may adopt, allow participants to elect to have such share withholding applied to all or a portion of the tax withholding obligation arising in connection with any particular grant.

Transferability

Except as permitted by the committee with respect to non-qualified stock options, only a participant may exercise rights under a grant during the participant's lifetime. Upon death, the personal representative or other person entitled to succeed to the rights of the participant may exercise such rights. A participant cannot transfer those rights except by will or by the laws of descent and distribution or, with respect to grants other than incentive stock options, pursuant to a domestic relations order. The committee may provide in a grant instrument that a participant may transfer non-qualified stock options to family members, or one or more trusts or other entities for the benefit of or owned by family members, consistent with applicable securities laws.

Amendment; termination

Our board of directors may amend or terminate our 2018 Plan at any time, except that our stockholders must approve an amendment if such approval is required in order to comply with the Code, applicable laws, or applicable stock exchange requirements. Unless terminated sooner by our board of directors or extended with stockholder approval, our 2018 Plan will terminate on the day immediately preceding the tenth anniversary of the effective date of the 2018 Plan.

Establishment of sub-plans

Our board of directors may, from time to time, establish one or more sub-plans under the 2018 Plan to satisfy applicable blue sky, securities, or tax laws of various jurisdictions. Our board of directors may establish such sub-plans by adopting supplements to the 2018 Plan setting forth limitations on the committee's discretion and such additional terms and conditions not otherwise inconsistent with the 2018 Plan as our board of directors will deem necessary or desirable. All such supplements will be deemed part of the 2018 Plan, but each supplement will only apply to participants within the affected jurisdiction.

Clawback

Subject to applicable law, the committee may provide in any grant instrument that if a participant breaches any restrictive covenant agreement between the participant and us, or otherwise engages in activities that constitute cause (as defined in our 2018 Plan) either while employed by, or providing services to, us or within a specified period of time thereafter, all grants held by the participant will terminate, and we may rescind any exercise of an option or stock appreciation right and the vesting of any other grant and delivery of shares upon such exercise or vesting, as applicable on such terms as the committee will determine, including the right to require that in the event of any rescission:

- the participant must return the shares received upon the exercise of any option or stock appreciation right or the vesting and payment of any other grants; or

- if the participant no longer owns the shares, the participant must pay to us the amount of any gain realized or payment received as a result of any sale or other disposition of the shares (if the participant transferred the shares by gift or without consideration, then the fair market value of the shares on the date of the breach of the restrictive covenant agreement or activity constituting cause), net of the price originally paid by the participant for the shares.

The committee may also provide for clawbacks pursuant to a clawback policy, which our board of directors may in the future adopt and amend from time to time. Payment by the participant will be made in such manner and on such terms and conditions as may be required by the committee. We will be entitled to set off against the amount of any such payment any amounts that we otherwise owe to the participant.

2017 Equity Compensation Plan

Our 2017 Plan, was adopted by our board of directors in July 2017, approved by our stockholders in July 2017 and became effective at that time. Our 2017 Plan will be replaced by our 2018 Plan as our board of directors has determined not to make additional awards under the 2017 Plan following the completion of our initial public offering. However, outstanding grants under our 2017 Plan will continue in effect according to their terms, consistent with our 2017 Plan. Our 2017 Plan allows our board of directors or the compensation committee consisting of members thereof to: (i) determine the individuals to whom grants will be made under the 2017 Plan, (ii) determine the type, size and terms of the grants to be made to each such individual, (iii) determine the time when the grants will be made and the duration of any applicable exercise or restriction period, including the criteria for exercisability and the acceleration of exercisability,

(iv) amend the terms of any grant previously made under the 2017 Plan and (v) deal with any other matters arising under the 2017 Plan.

We had reserved 2,659,885 shares of our common stock for the issuance of awards under our 2017 Plan, 2,502,530 shares of which are subject to outstanding equity awards as of July 9, 2018. Upon the adoption of our 2018 Plan, any reserved shares that are not subject to outstanding equity awards under the 2017 Plan will be added to the shares of common stock available for issuance under our 2018 Plan.

The committee has full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted, to make any combination of awards to participants, and to determine the specific terms and conditions of each award, subject to the provisions of our 2017 Plan. Persons eligible to participate in our 2017 Plan will be those full or part-time officers, employees, non-employee directors, and other key persons, including consultants, as selected from time to time by the committee in its discretion.

Our 2017 Plan permits the granting of both options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code and options that do not so qualify. The option exercise price of each option will be determined by the committee but may not be less than 100% of the fair market value of our common stock on the date of grant. The term of each option will be fixed by the committee and may not exceed ten years from the date of grant. The committee will determine at what time or times each option may be exercised.

The committee may award stock appreciation rights subject to such conditions and restrictions as it may determine. Stock appreciation rights entitle the recipient to shares of common stock equal to the value of the appreciation in our stock price over the exercise price. The exercise price may not be less than 100% of the fair market value of our common stock on the date of grant. The term of each stock appreciation right will be fixed by the committee and may not exceed ten years from the date of grant. The committee will determine at what time or times each stock appreciation right may be exercised.

The committee may award other equity-based awards of common stock to participants subject to such conditions and restrictions as it may determine. These conditions and restrictions may include the achievement of certain performance goals and/or other conditions. In the case of equity-based awards other than stock awards, awards may be payable in cash, our capital stock or any combination of the foregoing, as the committee may determine.

Our 2017 Plan provides that in the event of a "Change in Control," as defined in our 2017 Plan, the committee may provide that (i) (x) all outstanding options and SARs will accelerate and become fully exercisable and (y) all outstanding stock awards, stock units and other equity awards will become fully vested and will be payable on terms determined by the committee, (ii) determine that all outstanding options and SARs that are not exercised will be assumed by, or replaced with comparable options by the surviving corporation, or a parent or subsidiary of the surviving corporation, and other outstanding grants that remain in effect after the Change of Control will be converted to similar grants of the surviving corporation, or a parent or subsidiary of the surviving corporation, (iii) require that grantees surrender their outstanding options and SARs, in whole or in part, in exchange for one or more payments, in cash or our capital stock as determined by the committee, in an amount, if any, equal to the amount by which the then fair market value of the shares of our capital stock subject to the grantee's unexercised options and SARs exceeds the exercise price or base amount of the options and SARs, on such terms as the committee determines or (iv) after giving grantees an opportunity to exercise their outstanding options and SARs, in whole or in part, terminate any or all unexercised options and SARs at such time as the committee deems appropriate. Such assumption, surrender or termination will take place as of the date of the Change of

Control or such other date as the committee may specify. Without limiting the foregoing, if the per share fair market value of our capital stock equals or is less than the per share exercise price or base amount, as applicable, we would not be required to make any payment to the grantee upon surrender of the option or SAR.

A "Change of Control" under the 2017 Plan is defined as the occurrence of any of the following: (1) any person becoming a beneficial owner of our securities representing more than fifty percent of the voting power of our existing voting securities, subject to certain carve-outs, including a qualified initial public offering, or (2) the consummation of a merger or consolidation of the Company with another corporation, a sale of all or substantially all of our assets, or our liquidation or dissolution.

Employee Stock Purchase Plan

Purpose and types of grants

The purpose of our ESPP is to enable eligible employees to purchase shares of our common stock at a discount following the completion of this offering. Our ESPP is intended to qualify as an employee stock purchase plan under Section 423 of the Code.

Administration

A committee comprised of two or more members of our board of directors (referred to as "the plan administrator" in this description of our ESPP) will administer our ESPP and have authority to authorize offerings under our ESPP that are intended to comply with foreign law, as applicable. We expect to appoint the compensation committee of our board of directors as the plan administrator for our ESPP. The plan administrator has the authority to interpret and construe the provisions of our ESPP, and adopt rules and regulations for administering our ESPP in compliance with Section 423 of the Code, and its decisions are final and binding on all parties having an interest under our ESPP.

Shares subject to our ESPP

Subject to adjustment as described below, the maximum aggregate number of shares of common stock that may be issued or transferred under our ESPP will initially be limited to 348,612 shares. In addition, as of the first trading day of each fiscal year during the term of our ESPP (excluding any extensions), an additional number of shares of our common stock equal to 1% of the total number of shares outstanding on the last trading day in the immediately preceding fiscal year or 697,224 shares, whichever is less (or such lesser amount as determined by our board of directors) will be added to the number of shares authorized under our ESPP. If the total number of shares of common stock to be purchased pursuant to outstanding purchase rights on any particular date exceed the number of shares then available for issuance under our ESPP, then the plan administrator will allocate the available shares pro-rata and refund any excess payroll deductions or other contributions to participants.

Adjustments

In connection with stock splits, stock dividends, recapitalizations, and certain other events affecting our common stock, the plan administrator will make adjustments as it deems appropriate in the maximum number and kind of shares of our common stock available for issuance under our ESPP, the maximum number of shares of our common stock available for the annual increase in shares available for issuance under our ESPP, the maximum number and kind of shares of common stock purchasable per participant on a purchase date during an offering period, the number and kind of shares in effect under each outstanding purchase right, and the price per share in effect under each outstanding purchase right.

Eligibility

Our employees (and those of participating affiliates) who are regularly expected to work more than 20 hours per week for more than five months per calendar year are eligible to participate in our ESPP, unless otherwise mandated by local law. However, the plan administrator may waive one or both of these service requirements prior to the start of the applicable offering period.

Payroll deductions

Under our ESPP, eligible employees will be able to acquire shares of our common stock by accumulating funds through payroll deductions or other contributions, as determined by the plan administrator. Eligible employees will be able to select a rate of payroll deduction between 1% and 15% of their eligible compensation, unless the plan administrator establishes a different maximum percentage prior to the start date of the applicable offering period.

Offering periods

Our ESPP is implemented through a series of offering periods under which participating employees will automatically be granted a nontransferable purchase right to purchase shares of our common stock in that offering period using their accumulated payroll deductions, or other contributions, if permitted by the plan administrator. Each offering period will consist of one or more periods at the end of which shares will be purchased (each, a purchase interval). Each individual who is an eligible employee on the start date of an offering period under our ESPP may enter that offering period on such start date or on the start date of any purchase interval within that offering period, provided he or she remains an eligible employee. Each individual who first becomes an eligible employee after the start date of an offering period may enter that offering period on the start date of any purchase interval within that offering period on which he or she is an eligible employee. We have not yet determined when or how long the first offering period will be. Purchase intervals will be successive six month periods within an offering period, unless determined otherwise by the plan administrator prior to the start of the applicable offering period. In no event may an offering period exceed 27 months.

Termination and suspension of participation

A participant may irrevocably and prospectively withdraw from an offering period prior to the next scheduled purchase date in that offering period, and may elect to have any payroll deductions or other contributions collected during the purchase interval refunded or held for the purchase of shares on the next purchase date. To resume participation in any subsequent offering period, such individual must re-enroll in the ESPP. A participant's payroll deductions and other contributions will automatically be suspended while on an approved unpaid leave of absence and will terminate if the leave exceeds the longer of three months or the period that the participant has continued re-employment rights under law or contract. A participant's payroll deductions and other contributions will automatically be suspended when any limitations described below are reached. A participant's participation in an offering period automatically ends when he or she ceases to be an eligible employee, including due to termination of employment for any reason.

Limitation on purchase

Prior to the start date of the applicable offering period, and subject to the limitations described below and the adjustments described above, the plan administrator will determine the maximum number of shares of our common stock that a participant can purchase, each purchase date within that offering period and the maximum number of shares of our common stock that each participant can purchase for that offering period. Each purchase right will be automatically exercised in installments on each successive purchase

date within the offering period to purchase shares of common stock on behalf of each participant, other than participants whose payroll deductions have previously been refunded pursuant to the termination of purchase right provisions described above, on each such purchase date. Under no circumstances will purchase rights be granted under our ESPP to any eligible employee who would, immediately after the grant, own or hold outstanding options or other rights to purchase stock possessing 5% or more of the total combined voting power or value of all classes of our stock or that of any parent corporation or subsidiary corporation within the meaning of Section 424 of the Code. Prior to the start of any offering period and subject to any adjustments described above, the plan administrator will determine the maximum number of shares purchasable in total by all participants on a purchase date within an offering period and the maximum number of shares purchasable in total by all participants for that offering period. The foregoing limitations shall apply for each subsequent offering period, unless otherwise determined by the plan administrator prior to the start of any offering period.

Accrual limitations

No participant will have the right to purchase shares of our common stock in an amount that, when aggregated with the shares subject to purchase rights under all our employee stock purchase plans that are also in effect in the same calendar year, have a fair market value of more than $25,000, determined as of the first day of the applicable offering period.

Purchase price

The purchase price for shares of our common stock purchased under our ESPP will be established by the plan administrator prior to the start of the offering period, but will not be less than 85% of the lower of the fair market value of our common stock on (i) the date the eligible employee enters an offering period and (ii) the purchase date.

Change of control

If we experience a change of control, each outstanding purchase right will automatically be exercised, immediately prior to the effective date of the change of control. However, the applicable limitation on the number of shares of common stock purchasable per participant will continue to apply to any such purchase, but not the limitation applicable to the maximum number of shares of common stock purchasable in total by all participants.

In general terms, a change of control under our ESPP occurs if:

- any person, entity or affiliated group, with certain exceptions, acquires more than 50% of our then outstanding voting securities;
- we merge into another entity unless the holders of our voting shares immediately prior to the merger have at least 50% of the combined voting power of the securities in the merged entity or its parent;
- we merge into another entity and the members of the board of directors prior to the merger would not constitute a majority of the board of the merged entity or its parent;
- we sell or dispose of all or substantially all of our assets;
- our complete liquidation or dissolution; or
- a majority of the members of our board of directors is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the incumbent directors.

Amendment; termination

Our board of directors may amend, effective as of the start date of the next offering period, our ESPP at any time, except that our stockholders must approve an amendment if such approval is required to comply with Section 423 of the Code or other applicable law. Our board of directors may terminate our ESPP, effective following the close of the purchase interval, at any time. Unless terminated sooner by our board of directors, our ESPP will terminate on the earliest of: (1) the day immediately preceding the tenth anniversary of the effective date of our ESPP; (2) the date on which all shares available for issuance under our ESPP have been sold under our ESPP; or (3) the date on which all purchase rights under our ESPP are exercised in connection with a change of control.

401(k) plan

We participate in a tax-qualified retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees are able to defer eligible compensation up to certain Code limits, which are updated annually. We provide matching contributions up to 50% of actual dollars contributed, not to exceed a maximum of 6% of gross wages. Employee contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participants' directions. Employees are immediately and fully vested in their own contributions, but any contributions we make vest equally over the first five years of service. After five years of service, contributions we make vest 100%. The 401(k) plan is intended to be qualified under Section 401(a) of the Code, with the related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan are deductible by us when made, and contributions and earnings on those amounts are not taxable to the employees until withdrawn or distributed from the 401(k) plan.

U.K. pension contribution plan

We provide a pension contribution plan for our employees in the United Kingdom, pursuant to which we match our employees' contributions each year in amounts up to 8% of their annual base salary.

Limitation on liability and indemnification matters

Section 145 of the DGCL authorizes a corporation's board of directors to grant, and authorizes a court to award, indemnity to officers, directors and other corporate agents. As permitted by Delaware law, our amended and restated certificate of incorporation as currently in effect provides that, to the fullest extent permitted by Delaware law, no director will be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director. Pursuant to Delaware law, such protection would be not available for liability:

- for any breach of a duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- for any transaction from which the director derived an improper benefit; or
- for an act or omission for which the liability of a director is expressly provided by an applicable statute, including unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL.

Our amended and restated certificate of incorporation as currently in effect also provides that if Delaware law is amended after the approval by our stockholders of the amended and restated certificate of

incorporation to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law.

Our amended and restated bylaws as currently in effect further provide that we must indemnify our directors and officers to the fullest extent permitted by Delaware law. Our amended and restated bylaws as currently in effect also authorize us to indemnify any of our employees or agents and permit us to secure insurance on behalf of any officer, director, employee or agent for any liability arising out of their action in that capacity, whether or not Delaware law would otherwise permit indemnification.

In addition, our amended and restated bylaws as currently in effect provide that we are required to advance expenses to our directors and officers as incurred in connection with legal proceedings against them for which they may be indemnified and that the rights conferred in the amended and restated bylaws are not exclusive.

We have entered into indemnification agreements with each of our directors and executive officers. These agreements, among other things, would require us to indemnify each director and officer to the fullest extent permitted by Delaware law, the amended and restated certificate of incorporation and amended and restated bylaws, for expenses such as, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by the director or executive officer in any action or proceeding, including any action by or in our right, arising out of the person's services as our director or executive officer or as the director or executive officer of any subsidiary of ours or any other company or enterprise to which the person provides services at our request. Upon the completion of the offering, we intend to obtain and maintain directors' and officers' liability insurance.

The SEC has taken the position that personal liability of directors for violation of the federal securities laws cannot be limited and that indemnification by us for any such violation is unenforceable. The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws, each as currently in effect, may discourage stockholders from bringing a lawsuit against our directors and officers for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions.

Non-Employee director compensation

Other than with respect to the $36,000 of fees paid to Dr. Dhingra, and the $164,237 and $55,590 worth of non-qualified stock options granted to Dr. Dhingra and Mr. Slattery, respectively, no compensation was paid to or earned by our non-employee directors during our fiscal year ended March 31, 2018. Following the completion of this offering, we intend to consider and adopt a compensation policy for non-employee directors.

Certain relationships and related party transactions

Other than compensation arrangements, we describe below transactions and series of similar transactions, during our last three fiscal years, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed $120,000; and
- any of the directors, executive officers or holders of more than 5% of the common stock of Replimune, or any member of the immediate family of the foregoing persons, or person sharing the household with any of these individuals, had or will have a direct or indirect material interest.

Compensation arrangements for our directors and named executive officers are described elsewhere in this prospectus.

Financings

Series seed financing

On May 8, 2015, Replimune Limited entered into an initial share subscription agreement, which provided for the issue and sale by Replimune Limited of (i) an aggregate of 200,000 shares of series seed preferred stock and (ii) warrants to purchase an aggregate of 50,000 shares of series seed preferred stock to an affiliate of Omega Funds and an affiliate of Forbion Capital Partners for aggregate consideration of $2.0 million. The following table sets forth the numbers of shares of our series seed preferred stock and warrants to purchase shares of series seed preferred stock that were purchased by our directors, executive officers and holders of more than 5% of our capital stock and their respective affiliates.

Purchaser	Shares of series seed preferred stock purchased	Number of warrants	Aggregate purchase price ($)
Forbion Capital Fund III Coöperatief U.A.[(1)]	100,000	25,000	1,000,000
Omega Fund IV, L.P.[(2)]	100,000	25,000	1,000,000

(1) Forbion Capital Fund III Coöperatief U.A. is a holder of more than 5% of our capital stock and is affiliated with Sander Slootweg, a current member of our board of directors.

(2) Omega Fund IV, L.P. is a holder of more than 5% of our capital stock and is affiliated with Otello Stampacchia, a current member of our board of directors.

Series A financing

On September 16, 2015, Replimune Limited entered into a subscription agreement, pursuant to which it sold to affiliates of Omega Funds, Forbion Capital Partners and Atlas Ventures an aggregate of 432,276 shares of its series A preferred stock at a price of $34.70 per share for aggregate consideration of approximately $15.0 million. At a subsequent closing on March 10, 2017, Replimune Limited sold to the same group of investors an additional 432,277 shares of its series A preferred stock at a price of $34.70 per share for aggregate consideration of approximately $15.0 million. The following table sets forth the

numbers of shares of our series A preferred stock that were purchased by our directors, executive officers and holders of more than 5% of our capital stock and their respective affiliates.

Purchaser	Shares of series A preferred stock purchased	Aggregate purchase price ($)
Forbion Capital Fund III Coöperatief U.A.(1)	259,366	4,000,007.80
Omega Fund IV, L.P.(2)	259,366	4,000,007.80
Atlas Venture Fund X, L.P.(3)	345,821	6,999,996.30

(1) Forbion Capital Fund III Coöperatief U.A. is a holder of more than 5% of our capital stock and is affiliated with Sander Slootweg, a current member of our board of directors.

(2) Omega Fund IV, L.P. is a holder of more than 5% of our capital stock and is affiliated with Otello Stampacchia, a current member of our board of directors.

(3) Atlas Venture Fund X, L.P. is a holder of more than 5% of our capital stock and is affiliated with Jason Rhodes, a current member of our board of directors.

Corporate reorganization

On July 10, 2017, we completed a corporate reorganization, or the reorganization, in which all the shareholders of Replimune Limited exchanged all of the shares in Replimune Limited for shares of capital stock of Replimune Group. Following the reorganization, Replimune Limited is a wholly owned subsidiary of Replimune Group, Inc., a Delaware corporation. In order to give effect to the reorganization, we issued shares of our common stock, series seed preferred stock, series A preferred stock, and warrants to purchase shares of series seed preferred stock to each of the then existing shareholders of Replimune Limited in the same amount and classes of shares, or in the same form with respect to the warrants, as each such shareholder then held in Replimune Limited in exchange for each such shareholder's holdings in Replimune Limited, all pursuant to an exchange and contribution agreement among us, Replimune Limited and the then existing shareholders of Replimune Limited.

In connection with the reorganization, each option issued by Replimune Limited to acquire ordinary shares granted under Replimune Limited's then existing equity compensation plan was terminated and an equivalent number of options to acquire our common stock was granted, pursuant to an option rollover agreement, in the case of options granted in compliance with the requirements of the U.K. government's enterprise management incentive scheme, or pursuant to an option award, in the case of other outstanding options.

Series B financing

We entered into a series B preferred stock purchase agreement pursuant to which we sold an aggregate of 861,415 shares of our series B preferred stock to certain investors at an initial closing on July 21, 2017 and a subsequent closing on September 15, 2017, in each case at a price of $63.79 per share, for aggregate consideration of approximately $55.0 million. The following table sets forth the numbers of shares of our

series B preferred stock that were purchased by our directors, executive officers and holders of more than 5% of our capital stock and their respective affiliates.

Purchaser	Shares of series B preferred stock purchased	Aggregate purchase price ($)
Forbion Capital Fund III Coöperatief U.A.(1)	101,896	6,499,945.84
Omega Fund IV, LP(2)	101,896	6,499,945.84
Atlas Venture Fund X, L.P.(3)	101,896	6,499,945.84
Entities affiliated with Foresite Capital(4)	156,764	9,999,975.66
Entities affiliated with Bain Capital Life Sciences(5)	235,146	14,999,963.34
Entities affiliated with Redmile Group, LLC(6)	78,382	4,999,987.78

(1) Forbion Capital Fund III Coöperatief U.A. is a holder of more than 5% of our capital stock and is affiliated with Sander Slootweg, a current member of our board of directors.

(2) Omega Fund IV, L.P. is a holder of more than 5% of our capital stock and is affiliated with Otello Stampacchia, a current member of our board of directors.

(3) Atlas Venture Fund X, L.P. is a holder of more than 5% of our capital stock and is affiliated with Jason Rhodes, a current member of our board of directors.

(4) Entities affiliated with Foresite Capital are collectively the holders of more than 5% of our capital stock.

(5) Entities affiliated with Bain Capital Life Sciences are collectively the holders of more than 5% of our capital stock.

(6) Entities affiliated with Redmile Group, LLC will collectively become the holders of more than 5% of our capital stock upon the completion of this offering.

Common A stock

In July 2017, we issued 26,258 shares of common A stock to Colin Love, our Chief Operating Officer, for nominal consideration. Our common A stock carries voting rights, but only nominal economic rights. All such common A stock will be repurchased by us for nominal consideration and cancelled immediately prior to the completion of this offering.

Stockholder agreements

Investors' rights agreement

Following the completion of this offering, the holders of approximately 19.7 million shares of our common stock, or their permitted transferees, will be entitled to the registration rights set forth below with respect to registration of the resale of such shares under the Securities Act, pursuant to the amended and restated investors' rights agreement by and among us and certain of our stockholders. Additionally, each of Dr. Coffin, Mr. Astley-Sparke and Dr. Love will be entitled to the registration rights set forth below with respect to the shares of our common stock he holds on the effective date of the registration statement of which this prospectus is a part only after such time as he no longer provides services to us as an employee, consultant, officer or director. The provisions of the amended and restated investors' rights agreement, other than those relating to registration rights and certain transfer restrictions and lock-up obligations on the holders party thereto, will terminate immediately prior to the completion of this offering.

Demand registration rights

At any time after 180 days after the effective date of this initial public offering as set forth on the cover page of this prospectus, upon the written request of the holders holding at least 30% of the registrable securities then outstanding that we file a registration statement under the Securities Act covering the

registration of registrable securities owned by such holder(s) having an anticipated aggregate offering price, net of selling expenses, of at least $30.0 million, we will be obligated to notify all holders of registrable securities of such request within 10 days of receipt of such notice. As soon as practicable thereafter, and in any event within 60 days after the date such request is received, we will be required to register the sale on a registration statement on Form S-1 of all registrable securities that holders may request to be registered, subject to specified exceptions, conditions and limitations. We may postpone the filing of a registration statement for up to 120 days once in any 12-month period if in the good faith judgment of our board of directors such registration would be materially detrimental to us, and we are not required to effect the filing of a registration statement during the period starting with the date that is 60 days prior to our good faith estimate of the date of filing of a registration statement initiated by us and ending on a date 180 days after the effective date of a registration statement initiated by us. The underwriters of any underwritten offering will have the right to limit the number of shares having registration rights to be included in the registration statement.

"Piggyback" registration rights

If we register any securities for public sale, holders of registration rights will have the right to include their shares in the registration statement. The underwriters of any underwritten offering will have the right to limit the number of registrable securities to be included in the registration statement, but such number may not be below 30% of the total number of shares included in such registration statement. While the holders of such registrable securities will be entitled to notice of this offering and, at their option, to include their registrable securities in the registration statement of which this prospectus forms a part, we anticipate that all registration rights in respect of this offering will be waived and accordingly, no such registrable securities will need to be registered.

Form S-3 registration rights

If we are eligible to file a registration statement on Form S-3, holders of at least 30% of our registrable securities then outstanding have the right to request that we file a registration statement on Form S-3, so long as the aggregate price to the public of the securities to be sold under the registration statement on Form S-3 is at least $3 million or consists of all the remaining registrable securities, and subject to specified exceptions, conditions and limitations.

Expenses of registration

We are generally required to bear all expenses, including the fees and expenses of one counsel, not to exceed $50,000, representing the selling holders, incurred in connection with the demand, piggyback and Form S-3 registrations described above. We are not required to bear selling expenses, which include all underwriting discounts, selling commissions, stock transfer taxes applicable to the sale of registrable securities and fees and disbursements of any additional counsel for any selling holder. We are not required to pay registration expenses if the registration request is withdrawn at the request of the holders of a majority of the registrable securities unless (i) the holders of a majority of the registrable securities then outstanding agree to forfeit their right to one registration or (ii) the withdrawal is due to the discovery of a material adverse change in the conduct of our business.

Termination of registration rights

The demand, piggyback and Form S-3 registration rights discussed above will terminate as to a given holder of registrable securities upon the earlier of (i) the closing of a liquidity event as defined in our certificate of incorporation, (ii) five years following the completion of this offering, and (iii) such time as Rule 144 or another similar exemption under the Securities Act is available for the sale of all shares held

by the holder during a three-month period without registration and without the requirement for us to be in compliance with the current public information required under Rule 144(c)(1).

Agreements with our stockholders

In addition to the amended and restated investors' rights agreement, we have also entered into an amended and restated voting agreement and an amended and restated right of first refusal and co-sale agreement with holders of our preferred stock. The amended and restated voting agreement, among other things, provides for the voting of shares with respect to the composition of our board of directors and the voting of shares in favor of specified transactions approved by our board of directors and the holders of a requisite percentage of our preferred stock. The amended and restated right of first refusal and co-sale agreement, among other things, provides first refusal and tag-along sale rights for holders of our preferred stock with respect to transfers by certain stockholders. The provisions each of the amended and restated voting agreement and the amended and restated right of first refusal and co-sale agreement will terminate immediately prior to the completion of this offering.

Other transactions with related persons

Director relationships

Certain of our directors serve on our board of directors as representatives of entities which beneficially own 5% or more of our common stock, as indicated in the table below.

Director	Principal stockholders
Sander Slootweg	Forbion Capital Fund III Coöperatief U.A.
Otello Stampacchia	Omega Fund IV, L.P.
Jason Rhodes	Atlas Venture Fund X, L.P.

In addition, Mr. Astley-Sparke serves as a venture partner at Forbion Capital Partners, pursuant to which he is paid an annual retainer of $25,000. Mr. Astley-Sparke does not serve as a representative of Forbion Capital Partners on our board of directors.

Related party employment relationships

Our executive officers have employment agreements with us for their services. For information about the employment agreements with our named executive officers, refer to "Executive and director compensation—Employment arrangements."

Related party transactions policy

Our board of directors reviews and approves transactions with directors, officers and holders of five percent or more of our voting securities and their affiliates, each a related party. Prior to this offering, the material facts as to the related party's relationship or interest in the transaction are disclosed to our board of directors prior to their consideration of such transaction, and the transaction is not considered approved by our board of directors unless a majority of the directors who are not interested in the transaction approve the transaction. Further, when stockholders are entitled to vote on a transaction with a related party, the material facts of the related party's relationship or interest in the transaction are disclosed to the stockholders, who must approve the transaction in good faith.

In connection with the completion of this offering, we intend to adopt and maintain a written related party transactions policy that such transactions are subject to review and approval or ratification by our audit committee.

Indemnification of directors and officers

See "Executive and director compensation—Limitation on liability and indemnification matters."

Indications of interest

Several of our existing stockholders (or their affiliates), including stockholders affiliated with certain of our independent directors, and one of our independent directors, have agreed to purchase an aggregate of approximately 3.3 million shares of our common stock in this offering at the initial public offering price. The underwriters will receive the same underwriting discount on any shares purchased by these investors as they will on any other shares sold to the public in this offering.

Principal stockholders

The following table sets forth information regarding the beneficial ownership of our common stock as of July 9, 2018 by:

- each of our directors and named executive officers;
- all of our directors and executive officers as a group; and
- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock.

Beneficial ownership is determined according to the rules of the SEC and generally means that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power of that security, including options and warrants that are currently exercisable or exercisable within 60 days after July 9, 2018. Shares of our common stock issuable pursuant to stock options and warrants are deemed outstanding for computing the percentage of the person holding such options or warrants and the percentage of any group of which the person is a member but are not deemed outstanding for computing the percentage of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons named in the table below have sole voting and investment power with respect to all shares of common stock shown that they beneficially own, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Section 13(d) and 13(g) of the Securities Act.

Our calculation of the percentage of beneficial ownership prior to this offering is based on 24,138,587 shares of common stock outstanding as of July 9, 2018, after giving effect to (i) the conversion of all outstanding shares of our preferred stock into an aggregate of 19,157,360 shares of common stock upon the completion of this offering and (ii) all outstanding warrants to purchase shares of preferred stock becoming warrants to purchase shares of common stock upon the completion of this offering, in each case assuming that this offering was completed on July 9, 2018. Our calculation of the percentage of beneficial ownership after this offering is based on 30,838,587 shares of common stock outstanding immediately after the completion of this offering (assuming no exercise of the underwriters' over-allotment option to purchase additional shares of our common stock). In addition, several of our existing stockholders (or their affiliates), including stockholders affiliated with certain of our independent directors, and one of our independent directors, have agreed to purchase an aggregate of approximately 3.3 million shares of our common stock in this offering at the initial public offering price. The columns in the beneficial ownership table entitled "After this offering" give effect to such purchases.

Beneficial owner	Prior to this offering		After this offering	
	Number	Percent	Number	Percent
Greater than 5% stockholders:				
Atlas Venture Fund X, L.P.(1)	4,453,386	18.4%	4,453,386	14.4%
Bain Capital Life Sciences Fund, L.P.(2)	2,338,968	9.7%	2,838,968	9.2%
Forbion Capital Fund III Coöperatief U.A.(3)	4,836,788	19.8%	4,970,121	16.0%
Foresite Capital(4)	1,559,312	6.5%	2,009,312	6.5%
Omega Fund IV, L.P.(5)	4,836,788	19.8%	5,103,455	16.4%
Redmile Group, LLC(6)	779,655	3.2%	1,979,655	6.4%
Directors and Named Executive Officers:				
Philip Astley-Sparke(7)	1,466,542	6.1%	1,466,542	4.8%
Robert Coffin(8)	2,498,324	10.3%	2,498,324	8.1%
Pamela Esposito(9)	295,737	1.2%	295,737	*
Colin Love(10)	1,159,433	4.8%	1,159,433	3.8%
Jason Rhodes(11)(1)	4,453,386	18.4%	4,453,386	14.4%
Sander Slootweg(12)(3)	4,836,788	19.8%	4,970,121	16.0%
Otello Stampacchia(13)(5)	4,836,788	19.8%	5,103,455	16.4%
Kapil Dhingra	155,210	*	155,210	*
Hyam Levitsky	—	—	—	—
Joseph Slattery(14)	—	—	6,667	*
Dieter Weinand	—	—	—	—
All directors and executive officers as a group (12 persons)(7)(8)(9)(10)(11)(12)(13)(14)(15)	19,702,208	78.1%	20,108,875	63.0%

* Represents beneficial ownership of less than one percent of our outstanding common stock.

(1) Consists of (i) 3,439,839 shares of common stock issuable upon conversion of shares of our series A preferred stock and (ii) 1,013,547 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Atlas Venture Fund X, L.P. Atlas Venture Associates X, L.P. is the general partner of Atlas Venture Fund X, L.P., and Atlas Venture Associates X, LLC is the general partner of Atlas Venture Fund X, L.P. Jason Rhodes, Peter Barrett, Bruce Booth, Jean-Francois Formela, Jeff Fagnan, Chris Lynch and Ryan Moore are the members of Atlas Venture Associated X, LLC and collectively make investment decisions on behalf of Atlas Venture Fund X, LLC. The address for Atlas Venture Fund X, is 25 First Street, Suite 303, Cambridge, Massachusetts 02140.

(2) Consists of (i) 2,121,788 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Bain Capital Life Sciences Fund, L.P., or BCLS and (ii) 217,180 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by BCIP Life Sciences Associates, L.P., or BCIP. The governance, investment strategy and decision-making process with respect to investments held by BCLS and BCIP are directed by Bain Capital Life Sciences Investors, LLC, whose managers are Jeffrey Schwartz and Adam Koppel. As a result, each of Bain Capital Life Sciences Investors, LLC, Mr. Schwartz and Dr. Koppel may be deemed to share voting and dispositive power over the shares held by BCLS and BCIP. The address of BCLS is c/o Bain Capital Life Sciences, L.P., 200 Clarendon Street, Boston, Massachusetts 02116. Entities affiliated with Bain Capital have agreed to purchase 500,000 shares of our common stock in this offering.

(3) Consists of (i) 248,672 shares of common stock issuable upon exercise of warrants to purchase shares of common stock, (ii) 994,688 shares of common stock issuable upon conversion of shares of our series seed preferred stock, (iii) 2,579,881 shares of common stock issuable upon conversion of shares of our series A preferred stock, and (iv) 1,013,547 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Forbion Capital Fund III Coöperatief U.A. The address for Forbion Capital Fund III Coöperatief U.A. is Gooimeer 2-35, 1411 DC Naarden, the Netherlands. Forbion Capital Fund III Coöperatief U.A. has agreed to purchase 133,333 shares of our common stock in this offering.

(4) Consists of (i) 779,656 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Foresite Capital Fund III, or FCF III, and (ii) 779,656 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Foresite Capital Fund IV, L.P., or FCF IV. Foresite Capital Management III, LLC, or FCM III is the general partner of FCF III and Foresite Capital Management IV, LLC, or FCM IV, is the general partner of FCF IV. The managing director of FCM III and FCM IV, James Tananbaum, may be deemed to have voting and investment power with respect to such shares. Each of FCM III and its members, FCM IV and its members and Mr. Tananbaum disclaims beneficial ownership of any of these shares except to the extent of any pecuniary interest therein, and this footnote is not an admission that FCM III and its members, FCM IV or Mr. Tananbaum is the beneficial owner of these shares for purposes of Section 16 or any other purpose. The address of FCF III and FCF IV is c/o Foresite Capital Management, LLC, 600 Montgomery Street, Suite 4500, San Francisco, California 94111. Entities affiliated with Foresite Capital have agreed to purchase 450,000 shares of our common stock in this offering.

(5) Consists of (i) 248,672 shares of common stock issuable upon exercise of warrants to purchase shares of common stock, (ii) 994,688 shares of common stock issuable upon conversion of shares of our series seed preferred stock, (iii) 2,579,881 shares of common stock issuable upon conversion of shares of our series A preferred stock, and (iv) 1,013,547 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Omega Fund IV, L.P., or Omega IV. Omega Fund IV GP, L.P. is the general partner of Omega IV. Omega Fund IV GP Manager, Ltd., or Omega IV GP Ltd, is the general partner of Omega Fund IV GP, L.P. Otello Stampacchia, Richard Lim, and Anne-Mari Paster are all the shareholders and all the directors of Omega IV GP Ltd. Together they have shared voting and investment power over the shares held by Omega IV. The address of Omega IV, Omega IV GP LP and Omega IV GP Ltd and the above named individuals is c/o Omega Fund Management LLC, 185 Dartmouth Street, Suite 502, Boston, Massachusetts 02116. Omega Fund IV, L.P. has agreed to purchase 266,667 shares of our common stock in this offering.

(6) Consists of (i) 535,818 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Redmile Biopharma Investments I, L.P. and (ii) 243,837 shares of common stock issuable upon conversion of shares of our series B preferred stock held directly by Redmile Capital Offshore Fund II, Ltd. Redmile Group, LLC is the investment manager of each of Redmile Biopharma Investments I, L.P. and Redmile Capital Offshore Fund II, Ltd. (the "Redmile Funds"). Redmile Group, LLC may be deemed to beneficially own the securities held by the Redmile Funds. Jeremy C. Green serves as the managing member of Redmile Group, LLC and as such shares voting and dispositive power over the shares held by the Redmile Funds. Redmile Group, LLC and Mr. Green each disclaim beneficial ownership of these shares, except to the extent of its or his pecuniary interest in such shares, if any. The address of Redmile Group, LLC is One Letterman Drive, Building D, Suite D3-300, San Francisco, CA 94129. Entities affiliated with Redmile Group, LLC have agreed to purchase 1,200,000 shares of our common stock in this offering.

(7) Consists of (i) 1,442,297 shares of our common stock and (ii) 24,245 shares of common stock underlying options that are exercisable within 60 days of July 9, 2018.

(8) Consists of (i) 2,412,118 shares of our common stock and (ii) 86,206 shares of common stock underlying options that are exercisable within 60 days of July 9, 2018.

(9) Consists of 295,737 shares of common stock underlying options that are exercisable within 60 days of July 9, 2018.

(10) Consists of (i) 1,119,024 shares of our common stock and (ii) 40,409 shares of common stock underlying options that are exercisable within 60 days of July 9, 2018. Does not include 26,258 shares of common A stock held by Dr. Love, which will be repurchased by us and cancelled immediately prior to the completion of this offering.

(11) Mr. Rhodes is a partner at Atlas Ventures. Mr. Rhodes disclaims beneficial ownership of all shares held of record by affiliates of Atlas Ventures.

(12) Mr. Slootweg is a managing partner of Forbion Capital Partners. Mr. Slootweg disclaims beneficial ownership of all shares held of record by affiliates of Forbion Capital Partners.

(13) Dr. Stampacchia is a managing member of Omega Fund Management. Dr. Stampacchia disclaims beneficial ownership of all shares held of record by affiliates of Omega Fund Management.

(14) Mr. Slattery has agreed to purchase 6,667 shares of our common stock in this offering.

(15) Dr. Howard Kaufman does not own any shares of our common stock.

Description of capital stock

The following description of our capital stock and provisions of our amended and restated certificate of incorporation and bylaws as they will be in effect immediately prior to the completion of this offering are summaries and are qualified in their entirety by reference to our amended and restated certificate of incorporation and bylaws that will be in effect immediately prior to the completion of this offering, the forms of which have been filed as exhibits to the registration statement of which this prospectus forms a part, and by applicable law, including the DGCL.

Upon the completion of this offering, our authorized capital stock will consist of 150 million shares of common stock, par value $0.001 per share, and 10 million shares of preferred stock, par value $0.001 per share, all of which shares will be undesignated. Unless our board of directors determines otherwise, we will issue all shares of our capital stock in uncertificated form.

In connection with this offering, we effected a 1-for-9.94688 forward stock split of our common stock on July 9, 2018.

As of July 9, 2018, we had approximately 23 stockholders of record and 5,007,485 shares of our common stock were outstanding, including 26,258 shares of our common A stock which we will repurchase at a nominal value and cancel immediately prior to the completion of this offering. Upon completion of the conversion of our preferred stock into shares of our common stock and the repurchase and cancelation of all outstanding shares of our common A stock, 24,138,587 shares of our common stock will be outstanding. In addition, as of July 9, 2018, we had outstanding options to purchase 2,502,530 shares of our common stock under our 2017 Plan at a weighted average exercise price of $2.72 per share, 660,368 of which were exercisable as of that date.

Common stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Holders of our common stock are entitled to receive ratably any dividends declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock. The shares to be issued by us in this offering will be, when issued and paid for, validly issued, fully paid and non-assessable.

Pursuant to our amended and restated certificate of incorporation as currently in effect, 26,258 shares of our common stock is designated as common A stock. Effective as of immediately prior to the completion of this offering, we will repurchase all outstanding shares of our common A stock at a nominal purchase price and cancel such shares immediately thereafter.

Preferred stock

Immediately prior to the completion of this offering, all outstanding shares of our preferred stock will be converted into shares of our common stock. Upon the completion of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to 10 million shares of

preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our company or other corporate action. Immediately after the completion of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock following this offering.

Options

Upon completion of the offering, we will have options to purchase 2,502,530 shares of our common stock outstanding. Effective upon the completion of this offering, we expect to grant to certain of our employees and directors options to purchase approximately 1,147,500 shares of our common stock under our 2018 Plan at an exercise price equal to the initial public offering price listed on the cover page of this prospectus. See "Executive and director compensation—Employee benefit and stock plans" for a discussion of the terms of the 2018 Plan and the 2017 Plan.

Warrants

Immediately prior to the completion of this offering, all warrants to purchase shares of series seed preferred stock will become warrants to purchase shares of common stock on a one-for-one basis.

Anti-takeover effects of provisions of Delaware law and our amended and restated certificate of incorporation and amended and restated bylaws

Requirements for advance notification of stockholder meetings, nominations and proposals

Our amended and restated certificate of incorporation provides that special meetings of the stockholders may be called only by or at the direction of our board of directors. Our amended and restated bylaws prohibit the conduct of any business at a special meeting other than as specified in the notice for such meeting. These provisions may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control or management of our company.

Our amended and restated bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors, other than nominations made by or at the direction of our board of directors or a committee of our board of directors. In order for any matter to be "properly brought" before a meeting, a stockholder will have to comply with advance notice requirements and provide us with certain information. Additionally, vacancies and newly created directorships may be filled only by a vote of a majority of the directors then in office, even though less than a quorum, and not by the stockholders. Our amended and restated bylaws allow the presiding officer at a meeting of the stockholders to adopt rules and regulations for the conduct of meetings which may have the effect of precluding the conduct of certain business at a meeting if the rules and regulations are not followed. These provisions may also defer, delay or discourage a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Our amended and restated certificate of incorporation provides that our board of directors is expressly authorized to adopt, amend or repeal our amended and restated bylaws.

No cumulative voting

The DGCL provides that stockholders are not entitled to cumulate votes in the election of directors unless our amended and restated certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation does not expressly provide for cumulative voting.

Amendments to certificate of incorporation and bylaws

The DGCL provides that, unless a corporation's certificate of incorporation provides otherwise, the affirmative vote of holders of shares constituting a majority of the votes of all shares entitled to vote may approve amendments to the certificate of incorporation.

Our amended and rested certificate of incorporation and amended and restated bylaws will provide that the affirmative vote of holders of at least 75% of the outstanding shares of capital stock, voting together as a single class, and entitled to vote in the election of directors will be required to amend, alter, change or repeal the amended and restated certificate of incorporation and the amended and restated bylaws. This requirement of a supermajority vote to approve amendments to our amended and restated certificate of incorporation and amended and restated bylaws could enable a minority of our stockholders to exercise veto power over such amendments.

Forum selection clause

Our amended and restated certificate of incorporation will provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers or other employees to us or our stockholders; (iii) any action asserting a claim against us or any director or officer or other employee of ours arising pursuant to any provision of the DGCL or our amended and restated certificate of incorporation or amended and restated bylaws; or (iv) any action asserting a claim against us or any director or officer or other employee of ours governed by the internal affairs doctrine. Our amended and restated certificate of incorporation will further provide that any person or entity that acquires any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions described above. Moreover, our amended and restated certificate of incorporation will provide that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

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 number of directors in each class to be as nearly equal as possible. See "Management—Composition of our board of directors."

Stockholder action by written consent

Pursuant to Section 228 of the DGCL, any action required to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of our stock entitled to vote thereon were present and voted, unless the

corporation's certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation will prohibit the taking of any action of our stockholders by written consent without a meeting.

Delaware anti-takeover statute

We have not opted out of, and therefore are subject to, Section 203 of the DGCL. Section 203 provides that, subject to certain exceptions specified in the law, a publicly-held Delaware corporation shall not engage in certain "business combinations" with any "interested stockholder" for a three-year period after the date of the transaction in which the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the 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 number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned under employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least $66^{2}/_{3}\%$ of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes 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, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. Since Section 203 will apply to us, we expect that it would have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. In such event, we would also anticipate that Section 203 could discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Under certain circumstances, Section 203 makes it more difficult for a person who would be an "interested stockholder" to effect various business combinations with a corporation for a three-year period. The provisions of Section 203 may encourage companies interested in acquiring our company to negotiate in advance with our board of directors because the stockholder approval requirement would be avoided if our board of directors approves either the business combination or the transaction that results in the stockholder becoming an interested stockholder. These provisions also may make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Authorized but unissued capital stock

The DGCL does not require stockholder approval for any issuance of authorized shares. However, the listing requirements of Nasdaq, which apply so long as our common stock remains listed on Nasdaq, require stockholder approval of certain issuances equal to or exceeding 20% of the then outstanding voting power or then outstanding number of shares of common stock. These additional shares may be used for a variety

of corporate purposes, including future public offerings, to raise additional capital or to facilitate acquisitions.

One of the effects of the existence of unissued and unreserved common stock or preferred stock may be to enable our board of directors to issue shares to persons friendly to current management, which issuance could render more difficult or discourage an attempt to obtain control of our company by means of a merger, tender offer, proxy contest or otherwise, and thereby protect the continuity of our management and possibly deprive our investors of opportunities to sell their shares of common stock at prices higher than prevailing market prices.

Registration rights

Following the completion of this offering, the holders of approximately 19.7 million shares of our common stock, or their transferees, will be entitled to the registration rights with respect to registration of the resale of such shares under the Securities Act pursuant to the amended and restated investors' rights agreement, by and among us and certain of our investors. See "Certain relationships and related party transactions—Stockholder agreements—Investors' rights agreement" for more information.

Limitations of liability and indemnification

See "Executive and director compensation—Limitation on liability and indemnification matters."

Market listing

Our common stock has been approved for listing on Nasdaq under the symbol "REPL."

Transfer agent and registrar

Upon the completion of this offering, the transfer agent and registrar for our common stock will be Computershare.

Material United States federal income tax consequences to non-U.S. holders of our common stock

The following is a discussion of the material U.S. federal income tax consequences of the acquisition, ownership, and disposition of our common stock to a non-U.S. holder that purchases shares of our common stock for cash in this offering. For purposes of this discussion, a "non-U.S. holder" means a beneficial owner (other than a partnership or other pass-through entity) of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident alien 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 the United States or under the laws of the United States or of any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (i) the trust is subject to the primary supervision of a U.S. court and all substantial decisions of the trust are controlled by one or more U.S. persons or (ii) the trust has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

This discussion does not address the tax treatment of partnerships (or other entities that are treated as partnerships, grantor trusts, or other pass-through entities for U.S. federal income tax purposes) or persons that hold their common stock through partnerships, grantor trusts or such other pass-through entities. The tax treatment of a partner in a partnership or a holder of an interest in another pass-through entity that will hold our common stock generally will depend upon the status of the partner or interest holder and the activities of the partner or interest holder and the partnership or other pass-through entity, as applicable. Such a partner or interest holder should consult his, her, or its own tax advisor regarding the tax consequences of the acquisition, ownership and disposition of our common stock through a partnership or other pass-through entity, as applicable.

This discussion is based upon the provisions of the Code, the U.S. Treasury regulations promulgated thereunder, judicial decisions, and published rulings, administrative procedures and other guidance of the Internal Revenue Service, which we refer to as the IRS, all as in effect as of the date hereof. These authorities are subject to change and to differing interpretations, possibly with retroactive effect, which could result in U.S. federal income tax consequences different from those summarized below. No ruling has been or will be sought from the IRS with respect to the matters summarized below, and there can be no assurance that the IRS will not take a contrary position regarding the U.S. federal income tax consequences of the acquisition, ownership, or disposition of our common stock, or that any such contrary position would not be sustained by a court.

This discussion is not a complete analysis of all of the potential U.S. federal income tax consequences relating to the acquisition, ownership, and disposition of our common stock by non-U.S. holders, nor does it address any U.S. federal estate or gift tax or generation-skipping transfer tax consequences, any tax consequences arising under any state, local, or non-U.S. tax laws, the impact of any applicable income tax treaty, any consequences under the Medicare contribution tax on net investment income, the alternative minimum tax, or any consequences under other U.S. federal tax laws. In addition, this discussion does not

address tax consequences resulting from a non-U.S. holder's particular circumstances or to non-U.S. holders that may be subject to special tax rules, including, without limitation:

- non-U.S. governments, agencies or instrumentalities thereof, or entities they control;
- "controlled foreign corporations" and their shareholders;
- "passive foreign investment companies" and their shareholders;
- partnerships, grantor trusts or other entities that are treated as pass-through entities for U.S. federal income tax purposes, and their owners;
- corporations that accumulate earnings to avoid U.S. federal income tax;
- former citizens or former long-term residents of the United States;
- banks, insurance companies or other financial institutions;
- tax-exempt pension funds or other tax-exempt organizations;
- persons who acquired our common stock pursuant to the exercise of employee stock options or otherwise as compensation;
- tax-qualified retirement plans;
- traders, brokers or dealers in securities, commodities or currencies;
- persons who hold our common stock as a position in a hedging transaction, wash sale, "straddle," "conversion transaction" or other risk reduction transaction or synthetic security;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes);
- persons who own or have owned, or are deemed to own or to have owned, more than 5% of our common stock (except to the extent specifically set forth below);
- accrual method taxpayers who are required to recognize income for U.S. federal income tax purposes no later than when such income is taken into account for financial accounting purposes; or
- persons deemed to sell our common stock under the constructive sale provisions of the Code.

Prospective investors should consult their tax advisors regarding the particular U.S. federal income, estate, gift, and generation-skipping transfer tax consequences to them of acquiring, owning and disposing of our common stock, as well as any tax consequences arising under any state, local or non-U.S. tax laws and any other U.S. federal tax laws. Prospective investors should also consult their tax advisors regarding the potential impact of any applicable income or estate tax treaty between the United States and such prospective investor's country of residence and of the rules described below under the heading "Foreign Account Tax Compliance Act."

Distributions on common stock

As described in the section entitled "Dividend policy," we currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. The disclosure in this section addresses the consequences

should our board of directors, in the future, determine to make a distribution of cash or property with respect to our common stock (other than certain distributions of stock which may be made free of tax), or to effect a redemption that is treated for tax purposes as a distribution under U.S. federal income tax principles. Any such distribution will generally constitute a dividend for U.S. federal tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent such a distribution exceeds both our current and our accumulated earnings and profits, such excess will be allocated ratably among the shares of common stock with respect to which the distribution is made, will constitute a return of capital, and will first be applied against and reduce the non-U.S. holder's adjusted tax basis in those shares of common stock, but not below zero. Distributions in excess of our current and accumulated earnings and profits and in excess of a non-U.S. holder's tax basis in that non-U.S. holder's shares of common stock then will be treated as gain from the sale of that common stock, subject to the tax treatment described below under "Gain on disposition of common stock." A non-U.S. holder's adjusted tax basis in a share of common stock is generally the purchase price of the share, reduced by the amount of any distributions constituting a return of capital with respect to that share.

Any dividend paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividend, or such lower rate as may be specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence. If a non-U.S. holder is eligible for benefits under an income tax treaty and wishes to claim a reduced rate of withholding, the non-U.S. holder generally will be required to provide us or our paying agent with a properly completed IRS Form W-8BEN, Form W-8BEN-E, or other applicable form, certifying under penalties of perjury the non-U.S. holder's qualification for the reduced rate. This certification must be provided to us or our paying agent prior to the payment of the dividend and may be required to be updated periodically. Special certification requirements apply to non-U.S. holders that hold common stock through certain foreign intermediaries. Non-U.S. holders that do not timely provide the required certifications, but that qualify for a reduced income tax treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. If we are not able to determine whether or not a distribution will exceed current and accumulated earnings and profits at the time the distribution is made, we may withhold tax on the entire amount of any distribution at the same rate as we would withhold on a dividend. However, a non-U.S. holder may obtain a refund of amounts that we withhold to the extent attributable to the portion of the distribution in excess of our current and accumulated earnings and profits.

If a non-U.S. holder holds our common stock in connection with the conduct of a trade or business in the United States, and dividends paid on the common stock are effectively connected with the non-U.S. holder's U.S. trade or business (and, if required by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence, are attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States, as defined under the applicable income tax treaty), the non-U.S. holder will be exempt from U.S. federal withholding tax on the dividends. To claim the exemption, the non-U.S. holder must furnish a properly executed IRS Form W-8ECI (or other applicable form) prior to the payment of the dividends. Any dividends paid on our common stock that are effectively connected with a non-U.S. holder's U.S. trade or business (and satisfy any other applicable income tax treaty requirements) generally will be subject to U.S. federal income tax on a net income basis at the regular graduated U.S. federal income tax rates generally applicable to U.S. persons (as defined in the Code). A non-U.S. holder that is treated as a corporation for U.S. federal income tax purposes also may be subject to an additional branch profits tax equal to 30% (or such lower rate as is specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence) of

a portion of its earnings and profits for the taxable year that are effectively connected with a U.S. trade or business, as adjusted for certain items.

Gain on disposition of common stock

Subject to the discussion below regarding backup withholding and foreign accounts, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon the sale, exchange, or other taxable disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a U.S. trade or business (and, if required by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence, the gain is attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States), in which case the non-U.S. holder will generally be required to pay tax on the gain derived from the sale, exchange, or other taxable disposition (net of certain deductions or credits) under regular graduated U.S. federal income tax rates generally applicable to U.S. persons, and in the case of a non-U.S. holder that is treated as a corporation for U.S. federal income tax purposes, such non-U.S. holder may be subject to a branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence;

- the non-U.S. holder is an individual who is present in the United States for a period or periods aggregating 183 days or more during the taxable year in which the sale, exchange, or other taxable disposition occurs and certain other conditions are met, in which case the non-U.S. holder will be subject to U.S. federal income tax at a flat 30% rate (or such lower rate as is specified by an applicable income tax treaty between the United States and such non-U.S. holder's country of residence) on the net gain derived from the sale, exchange, or other taxable disposition, which gain may be offset by U.S. source capital losses (even though the non-U.S. holder is not considered a resident of the United States) provided that the non-U.S. holder has timely filed U.S. federal income tax returns reporting those losses; or

- our common stock is a "United States real property interest" by reason of our status as a "United States real property holding corporation," or USRPHC, for U.S. federal income tax purposes during the five-year period preceding such sale, exchange or other taxable disposition (or the non-U.S. holder's holding period, if shorter). Generally, a corporation is a USRPHC only if the fair market value of its U.S. real property interests 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.

We believe we are not now and we do not anticipate becoming a USRPHC. However, there can be no assurance that we are not now a USRPHC or will not become one in the future. Even if we are or become a USRPHC, for so long as our common stock is "regularly traded," as defined by applicable U.S. Treasury regulations, on an established securities market, sales of our common stock generally will not be subject to tax for non-U.S. holders that have not held more than 5% of our common stock, actually or constructively, during the five-year period preceding such non-U.S. holder's sale, exchange or other taxable disposition of our common stock (or the non-U.S. holder's holding period, if shorter). If we are determined to be a USRPHC and the foregoing exception does not apply, then the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the graduated U.S. federal income tax rates applicable to U.S. persons.

Information reporting and backup withholding

Generally, we or certain financial middlemen must report annually to the IRS and to each non-U.S. holder the gross amount of dividends and other distributions on our common stock paid to the non-U.S. holder and the amount of tax withheld, if any, with respect to those distributions. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in the non-U.S. holder's country of residence or incorporation.

A non-U.S. holder may be subject to backup withholding with respect to dividends paid on shares of our common stock, unless, generally, the non-U.S. holder certifies under penalties of perjury (usually on IRS Form W-8BEN or W-8BEN-E) that the non-U.S. holder is not a U.S. person or otherwise establishes an exemption. The backup withholding rate is currently 24%. Dividends that are paid to non-U.S. holders subject to the withholding of U.S. federal income tax, as described above under the heading "Distributions on common stock" generally will be exempt from U.S. backup withholding.

Additional rules relating to information reporting requirements and backup withholding with respect to payments of the proceeds from the disposition of shares of our common stock are as follows:

- If the proceeds are paid to or through the U.S. office of a broker, the proceeds generally will be subject to backup withholding and information reporting, unless the non-U.S. holder certifies under penalties of perjury (usually on IRS Form W-8BEN or W-8BEN-E) that the non-U.S. holder is not a U.S. person and satisfies certain other requirements or otherwise establishes an exemption.

- If the proceeds are paid to or through a non-U.S. office of a broker that is not a U.S. person and is not a foreign person with certain specified U.S. connections, which we refer to below as a "U.S.-related person," information reporting and backup withholding generally will not apply.

- If the proceeds are paid to or through a non-U.S. office of a broker that is a U.S. person or a U.S.-related person, the proceeds generally will be subject to information reporting (but not to backup withholding), unless the non-U.S. holder certifies under penalties of perjury (usually on IRS Form W-8BEN or W-8BEN-E) that the non-U.S. holder is not a U.S. person. A "U.S.-related person" includes (i) an entity classified as a "controlled foreign corporation" for U.S. federal income tax purposes, (ii) a foreign person, 50% or more of whose gross income from certain periods is effectively connected with a U.S. trade or business, or (iii) a foreign partnership if at any time during its tax year (a) one or more of its partners are U.S. persons who, in the aggregate, hold more than 50% of the income or capital interests of the partnership or (b) the foreign partnership is engaged in a U.S. trade or business.

Backup withholding is not an additional tax. Any amounts withheld from a non-U.S. holder under the backup withholding rules may be allowed as a refund or a credit against the non-U.S. holder's U.S. federal income tax liability, if any, provided that the non-U.S. holder timely furnishes the required information to the IRS. Non-U.S. holders should consult their own tax advisors regarding the application of the information reporting and backup withholding rules to them.

Foreign Account Tax Compliance Act

Sections 1471 to 1474 of the Code (commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) generally impose withholding tax on certain types of payments made to "foreign financial institutions" (as defined in the Code) and other non-U.S. entities unless those institutions and entities meet additional certification, information reporting and other requirements. FATCA generally imposes a 30% withholding tax on dividends on, or gross proceeds from the sale or other disposition of, our common

stock paid to a foreign financial institution unless the foreign financial institution enters into an agreement with the U.S. Treasury to, among other things, (i) undertake to identify accounts held by certain U.S. persons (including certain equity and debt holders of such institution) or by U.S.-owned foreign entities, (ii) annually report certain information about such accounts, and (iii) withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. In addition, subject to certain exceptions, FATCA imposes a 30% withholding tax on the same types of payments to a "non-financial foreign entity" (as defined in the Code) unless the entity certifies that it does not have any substantial U.S. owners (which generally include any U.S. persons who directly or indirectly own more than 10% of the entity) or furnishes identifying information regarding each such substantial U.S. owner or agrees to report that information to the IRS. These withholding taxes will be imposed on dividends paid on our common stock, and, after December 31, 2018, on gross proceeds from sales or other dispositions of our common stock. Withholding under FATCA generally will not be reduced or limited by bilateral income tax treaties. However, intergovernmental agreements between the United States and other countries with respect to the implementation of FATCA and non-U.S. laws, regulations and other authorities enacted or issued with respect to those intergovernmental agreements may modify the FATCA requirements described above. Non-U.S. holders should consult their own tax advisors regarding the possible implications of FATCA 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 the 30% withholding tax under FATCA.

Shares eligible for future sale

Prior to this offering, there has been no public market for shares of our common stock and a liquid trading market for our common stock may not develop or be sustained after this offering. We cannot predict the effect, if any, that future sales of shares of common stock, or the availability for future sale of shares of common stock, will have on the market price of shares of our common stock prevailing from time to time. The sale of substantial amounts of shares of our common stock in the public market, or the perception that such sales could occur, could harm the prevailing market price of shares of our common stock.

As of July 9, 2018, 5,007,485 shares of our common stock were outstanding, including 26,258 shares of our common A stock, which we will repurchase at a nominal value and cancel immediately prior to the completion of this offering. Upon completion of the conversion of our preferred stock into shares of our common stock and the repurchase and cancellation of all outstanding shares of our common A stock, 24,138,587 shares of our common stock will be outstanding. In addition, as of July 9, 2018, we had outstanding options to purchase 2,502,530 shares of our common stock under our 2017 Plan at a weighted average exercise price of $2.72 per share, 660,368 of which were exercisable as of that date.

Upon the completion of this offering, we will have a total of 30,838,587 shares of our common stock outstanding, or 31,843,587 shares of common stock if the underwriters exercise in full their option to purchase additional shares of common stock, at the initial public offering price of $15.00 per share. All of these shares of common stock will have been sold in this offering and will be freely tradable without restriction or further registration under the Securities Act by persons other than our "affiliates." Under the Securities Act, an "affiliate" of an issuer is a person who directly or indirectly controls, is controlled by or is under common control with that issuer.

As of July 9, 2018, 660,368 shares of common stock were issuable upon the exercise of outstanding stock options. In addition, 3,617,968 shares of common stock may be granted under our 2018 Plan and 348,612 shares of common stock may be purchased under our ESPP. In addition, effective upon the completion of this offering, we expect to grant to certain of our employees and directors options to purchase approximately 1,147,500 shares of our common stock under our 2018 Plan at an exercise price equal to the initial public offering price listed on the cover page of this prospectus. See "Executive and director compensation—Employee benefit and stock plans—2018 Omnibus Incentive Compensation Plan" and "Executive and director compensation—Employee benefit and stock Plans—Employee stock purchase plan." We intend to file one or more registration statements on Form S-8 under the Securities Act to register shares of common stock or securities convertible into or exchangeable for shares of common stock issued under or covered by our 2017 Plan, 2018 Plan, and ESPP. Any such Form S-8 registration statements will automatically become effective upon filing, subject to vesting restrictions, the lock-up agreements described herein and Rule 144 limitations applicable to affiliates. Accordingly, shares of common stock registered under such registration statements will be available for sale in the open market. We expect that the initial registration statement on Form S-8 will cover all shares of common stock.

Our certificate of incorporation authorizes us to issue additional shares of common stock and options, rights, warrants and appreciation rights relating to common stock for the consideration and on the terms and conditions established by our board of directors in its sole discretion. In accordance with the DGCL and the provisions of our certificate of incorporation, we may also issue preferred stock that has designations, preferences, rights, powers and duties that are different from, and may be senior to, those applicable to shares of common stock. See "Description of capital stock."

Registration rights

Following the completion of this offering, the holders of approximately 19.7 million shares of our common stock, or their transferees, will be entitled to registration rights with respect to registration of the resale of such shares under the Securities Act pursuant to the amended and restated investors' rights agreement, by and among us and certain of our investors. See "Certain relationships and related party transactions—Stockholder agreements—Investors' rights agreement" for more information.

Lock-Up agreements

We, each of our directors and officers and holders of substantially all of our fully diluted outstanding capital stock have agreed to certain restrictions on our and their ability to sell additional shares of our common stock for a period of 180 days after the date of this prospectus. We and they have agreed not to directly or indirectly offer for sale, sell, contract to sell, grant any option for the sale of, or otherwise issue or dispose of, any shares of our common stock, options or warrants to purchase shares of our common stock, or any related security or instrument without the prior written consent of each of J.P. Morgan Securities LLC and Leerink Partners LLC. The agreements provide exceptions for (a) sales to the underwriters in connection with this offering, (b) our sales in connection with existing incentive plans and (c) certain other exceptions. J.P. Morgan Securities LLC and Leerink Partners LLC in their sole discretion may release any of the securities subject to these lock-up agreements at any time. If the restrictions under the lock-up agreements are waived, shares of our common stock may become available for resale into the market, subject to applicable law, which could reduce the market price for our common stock. See "Underwriting."

Rule 144

In general, under Rule 144 a person (or persons whose shares are aggregated) who may be deemed our affiliate is entitled to sell within any three-month period a number of restricted securities that does not exceed the greater of 1% of the then outstanding shares of common stock and the average weekly trading volume during the four calendar weeks preceding each such sale, provided that at least six months has elapsed since such shares of common stock were acquired from us or any affiliate of ours and certain manner of sale, notice requirements and requirements as to availability of current public information about us are satisfied. Any person who is deemed to be our affiliate must also comply with such provisions of Rule 144 (other than the six-month holding period requirement) in order to sell shares of common stock which are not restricted securities (such as shares of common stock acquired by affiliates through purchases in the open market following this offering). A person who is not our affiliate, and who has not been our affiliate at any time during the 90 days preceding any sale, is entitled to sell shares of common stock (i) subject only to the requirements as to availability of current public information about us, provided that a period of at least six months has elapsed since the shares of common stock were acquired from us or any affiliate of ours, and (ii) without regard to the requirements as to availability of current public information about us or any other requirement of Rule 144, provided that at least one year has elapsed since the shares of common stock were acquired from us or any affiliate of ours.

Stock options and restricted stock

See "Shares eligible for future sale." For a more complete discussion of our stock plans, see "Executive and director compensation—Employee benefit and stock plans."

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and under "Underwriting" included elsewhere in this prospectus and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

Underwriting

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC and Leerink Partners LLC are acting as book-running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the representatives. 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 initial 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	3,182,500
Leerink Partners LLC	2,010,000
BMO Capital Markets Corp.	1,507,500
Total	6,700,000

The underwriters are committed to purchase all the common shares 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 common shares 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 $0.63 per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to $0.21 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 offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

Several of our existing stockholders (or their affiliates), including stockholders affiliated with certain of our independent directors, and one of our independent directors, have agreed to purchase an aggregate of approximately 3.3 million shares of our common stock in this offering at the initial public offering price. The underwriters will receive the same underwriting discount on any shares purchased by these investors as they will on any other shares sold to the public in this offering.

The underwriters have an option to buy up to 1,005,000 additional shares of common stock from us to cover sales of shares by the underwriters that 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.

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 $1.05 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	$ 1.05	$ 1.05
Total	$ 7,035,000	$ 8,090,250

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 $2.7 million. We have agreed to reimburse the underwriters for certain expenses related to clearance of this offering with the Financial Industry Regulatory Authority, or FINRA.

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 this 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 SEC 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 and Leerink Partners LLC for a period of 180 days after the date of this prospectus, subject to certain limited exceptions set forth in the underwriting agreement.

Our directors, executive officers and holders of substantially all of our fully diluted outstanding capital stock 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 certain 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 and Leerink Partners LLC, (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 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 (ii) 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 (i) or (ii) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (iii) 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 several underwriters against certain liabilities, including liabilities under the Securities Act.

Our common stock has been approved for listing on Nasdaq under the symbol "REPL."

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, 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 Nasdaq, 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 was 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 considered 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 market 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.

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.

Selling restrictions

European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive, or a Relevant Member State, an offer to the public of any shares of our common stock may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares of our common stock may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- 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 for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares of our common stock 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 any shares of our common stock to be offered so as to enable an investor to decide to purchase any shares of our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), 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

Each underwriter has represented and agreed that:

- it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, or FSMA, received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and

- it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the shares of our common stock in, from or otherwise involving the United Kingdom.

Hong Kong

The shares of our common stock have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares of our common stock has been or may be issued or has been or may be in the possession of any person for the purposes of issuance, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares of our common stock which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares of our common stock may not be circulated or distributed, nor may the shares of our common stock be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares of our common stock are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

- a trust (where the trustee is not an accredited investor) the sole purpose of which is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares of our common stock pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Japan

No registration pursuant to Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended), or the FIEL, has been made or will be made with respect to the solicitation of the application for the acquisition of the shares of our common stock.

Accordingly, the shares of our common stock have not been, directly or indirectly, offered or sold and will not be, directly or indirectly, offered or sold in Japan or to, or for the benefit of, any resident of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or re-sale, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan except pursuant to an exemption from the registration requirements, and otherwise in compliance with, the FIEL and the other applicable laws and regulations of Japan.

For Qualified Institutional Investors, or QII

Please note that the solicitation for newly-issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to the shares of our common stock constitutes either a "QII only private placement" or a "QII only secondary distribution" (each as described in Paragraph 1, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to the shares of our common stock. The shares of our common stock may only be transferred to QIIs.

For Non-QII Investors

Please note that the solicitation for newly-issued or secondary securities (each as described in Paragraph 2, Article 4 of the FIEL) in relation to the shares of our common stock constitutes either a "small number private placement" or a "small number private secondary distribution" (each as is described in Paragraph 4, Article 23-13 of the FIEL). Disclosure regarding any such solicitation, as is otherwise prescribed in Paragraph 1, Article 4 of the FIEL, has not been made in relation to the shares of our common stock. The shares of our common stock may only be transferred en bloc without subdivision to a single investor.

Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission, or ASIC, in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001, or the Corporations Act, and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons, or the Exempt Investors, who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take into account the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate for their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Switzerland

The shares of our common stock may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland. Neither this document nor any other offering or marketing material relating to the offering, us or the shares have been or will be filed with or approved by any Swiss regulatory authority. In

particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA.

The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Canada

The shares of our common stock 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 of our common stock 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 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) 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.

Israel

In the State of Israel this prospectus shall not be regarded as an offer to the public to purchase shares of common stock under the Israeli Securities Law, 5728-1968, which requires a prospectus to be published and authorized by the Israel Securities Authority, if it complies with certain provisions of Section 15 of the Israeli Securities Law, 5728-1968, including, inter alia, if: (i) the offer is made, distributed or directed to not more than 35 investors, subject to certain conditions (the "Addressed Investors"); or (ii) the offer is made, distributed or directed to certain qualified investors defined in the First Addendum of the Israeli Securities Law, 5728-1968, subject to certain conditions (the "Qualified Investors"). The Qualified Investors shall not be taken into account in the count of the Addressed Investors and may be offered to purchase securities in addition to the 35 Addressed Investors. The company has not and will not take any action that would require it to publish a prospectus in accordance with and subject to the Israeli Securities Law, 5728-1968. We have not and will not distribute this prospectus or make, distribute or direct an offer to subscribe for our common stock to any person within the State of Israel, other than to Qualified Investors and up to 35 Addressed Investors.

Qualified Investors may have to submit written evidence that they meet the definitions set out in of the First Addendum to the Israeli Securities Law, 5728-1968. In particular, we may request, as a condition to be offered common stock, that Qualified Investors will each represent, warrant and certify to us and/or to anyone acting on our behalf: (i) that it is an investor falling within one of the categories listed in the First Addendum to the Israeli Securities Law, 5728-1968; (ii) which of the categories listed in the First Addendum to the Israeli Securities Law, 5728-1968 regarding Qualified Investors is applicable to it; (iii) that

it will abide by all provisions set forth in the Israeli Securities Law, 5728-1968 and the regulations promulgated thereunder in connection with the offer to be issued common stock; (iv) that the shares of common stock that it will be issued are, subject to exemptions available under the Israeli Securities Law, 5728-1968: (a) for its own account; (b) for investment purposes only; and (c) not issued with a view to resale within the State of Israel, other than in accordance with the provisions of the Israeli Securities Law, 5728-1968; and (v) that it is willing to provide further evidence of its Qualified Investor status. Addressed Investors may have to submit written evidence in respect of their identity and may have to sign and submit a declaration containing, inter alia, the Addressed Investor's name, address and passport number or Israeli identification number.

Other relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Certain of the underwriters and their respective affiliates may in the future perform various financial advisory and investment banking services for us, for which they may receive customary fees and expenses.

In addition, in the ordinary course of business, the underwriters and their respective affiliates may make or hold a broad array of investments including serving as counterparties to certain derivative and hedging arrangements and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve our securities and/or instruments. The underwriters and their respective affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

In a series of related transactions in August and September 2017, entities affiliated with Leerink Partners LLC purchased an aggregate of 7,054 shares of our series B preferred stock on the same terms as the other investors in the series B financing. These shares will convert into 70,164 shares of our common stock upon the completion of this offering.

Legal matters

The validity of the shares of common stock offered hereby will be passed upon for us by Morgan, Lewis & Bockius LLP. Certain legal matters in connection with this offering will be passed upon for the underwriters by Cravath, Swaine & Moore LLP.

Experts

The financial statements as of March 31, 2018 and 2017 and for the years then ended included in this prospectus have been so included in reliance on the report (which contains an explanatory paragraph relating to the Company's requirement of additional financing to fund future operations as described in Note 1 to the consolidated financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

Where you can find more information

We have filed with the SEC a registration statement on Form S-1 (including exhibits, schedules, and amendments) under the Securities Act with respect to the shares of common stock offered by this prospectus. This prospectus, which constitutes a part of that registration statement, does not contain all the information set forth in the registration statement or the exhibits and schedules that are part of the registration statement. Some items included in the registration statement are omitted from the prospectus in accordance with the rules and regulations of the SEC. For further information about us and the shares of common stock to be sold in this offering, you should refer to the registration statement and the accompanying exhibits and schedules filed therewith. Statements contained in this prospectus relating to the contents of any contract, agreement or other document that is filed as an exhibit to the registration statement are not necessarily complete and are qualified in all respects by the complete text of the applicable contract, agreement or other document, a copy of which has been filed as an exhibit to the registration statement. Whenever this prospectus refers to any contract, agreement, or other document, you should refer to the exhibits that are a part of the registration statement for a copy of the contract, agreement, or document.

You may read and copy all or any portion of the registration statement and the accompanying exhibits or any other information we file at the SEC's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents, upon payment of a duplicating fee, by writing to the SEC. Please call the SEC at 1-800-SEC-0330 for further information about the operation of the public reference rooms. Our SEC filings, including the registration statement, are also available to you on the SEC's Website (*http://www.sec.gov*).

Upon the completion of this offering, we will become subject to the information and periodic reporting requirements of the Exchange Act. Under the Exchange Act, we will file annual, quarterly and current reports, as well as proxy statements and other periodic information with the SEC. These periodic reports, proxy statements, and other information will be available for inspection and copying at the SEC's Public Reference Room and the website of the SEC referred to above.

Index to consolidated financial statements

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Replimune Group, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Replimune Group, Inc. and its subsidiaries as of March 31, 2018 and 2017, and the related consolidated statements of operations, of comprehensive loss, of convertible preferred stock and stockholders' deficit and of cash flows for the years then ended, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of March 31, 2018 and 2017, and the results of their operations and their cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Emphasis of Matter

As discussed in Note 1 to the consolidated financial statements, the Company will require additional financing to fund future operations. Management's plans in regard to this matter are described in Note 1.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
June 11, 2018, except for the effects of the forward stock split discussed in Note 16
to the consolidated financial statements, as to which the date is July 10, 2018

We have served as the Company's auditor since 2018.

Replimune Group, Inc.

Consolidated balance sheets

(Amounts in thousands, except share and per share amounts)	March 31, 2017	March 31, 2018	Pro forma March 31, 2018 (unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 20,594	$ 17,583	$ 17,583
Short-term investments	—	43,968	43,968
Research and development incentives receivable	1,407	2,389	2,389
Prepaid expenses and other current assets	401	763	763
Total current assets	22,402	64,703	64,703
Property, plant and equipment, net	342	370	370
Restricted cash	75	78	78
Total assets	$ 22,819	$ 65,151	$ 65,151
Liabilities, Convertible Preferred Stock and Stockholders' Equity (Deficit)			
Current liabilities:			
Accounts payable	$ 323	$ 1,993	$ 1,993
Accrued expenses and other current liabilities	1,662	3,171	3,171
Total current liabilities	1,985	5,164	5,164
Deferred rent, net of current portion	70	52	52
Warrant liability	670	1,642	—
Total liabilities	2,725	6,858	5,216
Commitments and contingencies (Note 13)			
Convertible preferred stock (series seed, A and B), $0.001 par value; 1,114,553 shares authorized as of March 31, 2017 and 1,975,968 shares authorized as of March 31, 2018; 1,064,553 shares issued and outstanding as of March 31, 2017 and 1,925,968 shares issued and outstanding as of March 31, 2018; no shares issued or outstanding, pro forma (unaudited) as of March 31, 2018	31,609	86,361	—
Stockholders' Equity (Deficit):			
Common stock, $0.001 par value; 27,314,288 shares authorized as of March 31, 2017 and 27,314,288 shares authorized (inclusive of 26,258 shares of common A stock) as of March 31, 2018; 4,973,439 shares issued and outstanding as of March 31, 2017 and 5,007,485 issued and outstanding (inclusive of 26,258 shares of common A stock) as of March 31, 2018; 24,138,587 shares issued and outstanding, pro forma (unaudited) as of March 31, 2018	5	5	24
Additional paid-in capital	259	1,097	89,081
Accumulated deficit	(9,230)	(28,932)	(28,932)
Accumulated other comprehensive loss	(2,549)	(238)	(238)
Total stockholders' equity (deficit)	(11,515)	(28,068)	59,935
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	$ 22,819	$ 65,151	$ 65,151

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

Replimune Group, Inc.

Consolidated statements of operations

(Amounts in thousands, except share and per share amounts)	Year ended March 31, 2017	2018
Operating expenses:		
Research and development	$ 6,936	$ 13,516
General and administrative	2,711	5,713
Total operating expenses	9,647	19,229
Loss from operations	(9,647)	(19,229)
Other income (expense):		
Research and development incentives	1,442	2,267
Interest income	25	288
Change in fair value of warrant liability	(150)	(972)
Other income (expense), net	626	(2,056)
Total other income (expense), net	1,943	(473)
Net loss	(7,704)	(19,702)
Net loss attributable to common stockholders	$ (7,704)	$ (19,702)
Net loss per share attributable to common stockholders, basic and diluted	$ (1.55)	$ (3.96)
Weighted average common shares outstanding, basic and diluted	4,973,439	4,978,539
Pro forma net loss per share attributable to common stockholders, basic and diluted (unaudited)		$ (0.87)
Pro forma weighted average common shares outstanding, basic and diluted (unaudited)		21,506,697

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

Replimune Group, Inc.

Consolidated statements of comprehensive loss

(Amounts in thousands)	Year ended March 31, 2017	2018
Net loss	$ (7,704)	$ (19,702)
Other comprehensive income (loss):		
Foreign currency translation gain (loss)	(1,437)	2,376
Net unrealized loss on short-term investments, net of tax	—	(65)
Comprehensive loss	$ (9,141)	$ (17,391)

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

Replimune Group, Inc.

Consolidated statements of convertible preferred stock and stockholders' deficit

(Amounts in thousands, except share amounts)	Convertible preferred stock		Common stock		Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive Loss	Total stockholders' deficit
	Shares	Amount	Shares	Amount				
Balances as of March 31, 2016	632,276	$ 16,609	4,973,439	$ 5	$ 51	$ (1,526)	$ (1,112)	$ (2,582)
Issuance of series A convertible preferred stock	432,277	15,000	—	—	—	—	—	—
Foreign currency translation adjustment	—	—	—	—	—	—	(1,437)	(1,437)
Stock-based compensation expense	—	—	—	—	208	—	—	208
Net loss	—	—	—	—	—	(7,704)	—	(7,704)
Balances as of March 31, 2017	1,064,553	31,609	4,973,439	5	259	(9,230)	(2,549)	(11,515)
Issuance of series B convertible preferred stock, net of $198 issuance costs	861,415	54,752	—	—	—	—	—	—
Issuance of common A stock	—	—	26,258	—	—	—	—	—
Foreign currency translation adjustment	—	—	—	—	—	—	2,376	2,376
Unrealized loss on short-term investments, net of tax	—	—	—	—	—	—	(65)	(65)
Stock options in exchange for consulting services	—	—	7,788	—	26	—	—	26
Stock-based compensation expense	—	—	—	—	812	—	—	812
Net loss	—	—	—	—	—	(19,702)	—	(19,702)
Balances as of March 31, 2018	1,925,968	$ 86,361	5,007,485	$ 5	$ 1,097	$ (28,932)	$ (238)	$ (28,068)

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

Replimune Group, Inc.

Consolidated statements of cash flows

(Amounts in thousands)	Year ended March 31, 2017	2018
Cash flows from operating activities:		
Net loss	$ (7,704)	$ (19,702)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	208	812
Depreciation and amortization	122	109
Change in fair value of warrant liability	150	972
Stock options in exchange for consulting services	—	26
Net amortization of premiums and discounts on short-term investments	—	(123)
Changes in operating assets and liabilities:		
Research and development incentives receivable	(1,210)	(767)
Prepaid expenses and other current assets	(325)	(305)
Accounts payable	203	1,596
Accrued expenses and other current liabilities	1,406	1,393
Deferred rent	73	(25)
Net cash used in operating activities	(7,077)	(16,014)
Cash flows from investing activities:		
Purchases of property, plant and equipment	(238)	(136)
Purchases of short-term investments	—	(52,463)
Proceeds from maturities of short-term investments	—	8,553
Net cash used in investing activities	(238)	(44,046)
Cash flows from financing activities:		
Proceeds from issuance of series A convertible preferred stock	15,000	—
Proceeds from issuance of series B convertible preferred stock, net of issuance costs	—	54,752
Net cash provided by financing activities	15,000	54,752
Effect of exchange rate changes on cash and cash equivalents	(1,419)	2,297
Net increase (decrease) in cash and cash equivalents	6,266	(3,011)
Cash and cash equivalents at beginning of year	14,328	20,594
Cash and cash equivalents at end of year	$ 20,594	$ 17,583

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

Replimune Group, Inc.

Notes to consolidated financial statements

(Amounts in thousands, except share and per share amounts)

1. Nature of the business

Replimune Group, Inc. (the "Company") is a clinical-stage biotechnology company focused on the development of oncolytic immunotherapies to treat cancer.

Replimune Limited ("Replimune UK") was incorporated in 2015 under the laws of England, and was the sole shareholder of Replimune, Inc. ("Replimune US"), a Delaware corporation. On July 5, 2017, Replimune Group, Inc., a Delaware corporation, was incorporated and on July 10, 2017 the shareholders of Replimune UK effected a share-for-share exchange pursuant to which they exchanged their outstanding shares in Replimune UK for shares in Replimune Group, Inc., on a one-for-one basis. In addition, the holders of warrants and stock options to purchase Replimune UK capital stock canceled their warrants to purchase shares of series seed preferred stock and stock options in Replimune UK and were issued replacement warrants to purchase shares of series seed preferred stock and stock options to acquire Replimune Group, Inc. capital stock on a one-for-one basis. These transactions are collectively referred to as the reorganization. Upon completion of the reorganization, the historical consolidated financial statements of Replimune UK became the historical consolidated financial statements of Replimune Group, Inc. because the reorganization was accounted for similar to a reorganization of entities under common control due to the high degree of common ownership of Replimune UK and Replimune Group, Inc. and lack of economic substance to the transaction. The Company concluded that the reorganization resulted in no change in the material rights and preferences of each respective class of equity interests and no change in the fair value of each respective class of equity interests before and after the reorganization. On December 8, 2017, Replimune UK transferred all outstanding shares of its wholly owned subsidiary, Replimune US to Replimune Group, Inc. Replimune Group. Inc., a Delaware corporation, is the sole shareholder of Replimune UK, Replimune US and Replimune Securities Corporation, a Massachusetts corporation that was incorporated in November 2017.

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry, including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and the ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including preclinical and clinical testing and regulatory approval, prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure and extensive compliance and reporting capabilities. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will realize significant revenue from product sales.

The accompanying consolidated financial statements have been prepared on the basis of continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the ordinary course of business. Through March 31, 2018, the Company has funded its operations primarily with proceeds from the sale of convertible preferred stock. The Company has incurred recurring losses since its inception, including net losses of $7,704 for the year ended March 31, 2017 and $19,702 for the year ended March 31, 2018. In addition, as of March 31, 2018, the Company had an accumulated deficit of $28,932. The Company expects to continue to generate operating losses for the foreseeable future. As of June 11, 2018, the

issuance date of the consolidated financial statements for the year ended March 31, 2018, the Company expects that its cash and cash equivalents and short-term investments will be sufficient to fund its operating expenses and capital expenditure requirements through at least 12 months from the issuance of the consolidated financial statements. The future viability of the Company beyond that point is dependent on its ability to raise additional capital to finance its operations.

The Company is seeking to complete an initial public offering ("IPO") of its common stock. Upon the completion of a qualified public offering on specified terms, the Company's outstanding convertible preferred stock will convert into shares of common stock (see Note 7). In the event the Company does not complete an IPO, the Company will seek additional funding through private equity financings, debt financings or other capital sources, including collaborations with other companies or other strategic transactions. The Company may not be able to obtain funding on acceptable terms, or at all. The terms of any financing may adversely affect the holdings or the rights of the Company's stockholders.

If the Company is unable to obtain funding it could be forced to delay, reduce or eliminate some or all of its research and development programs, product portfolio expansion or commercialization efforts, which could adversely affect its business prospects, or it may be unable to continue operations. Although management continues to pursue these plans, there is no assurance that the Company will be successful in obtaining sufficient funding on terms acceptable to the Company to fund continuing operations, if at all.

2. Summary of significant accounting policies

Principles of consolidation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP") and include the accounts of the Company and its wholly owned subsidiaries, Replimune UK, Replimune US and Replimune Securities Corporation, after elimination of all intercompany accounts and transactions. The consolidated financial statements reflect the capital as if Replimune Group, Inc. had been in existence for all periods presented.

Use of estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the reporting periods. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, the accrual for research and development expenses and the valuation of common stock and stock-based awards. The Company bases its estimates on historical experience, known trends and other market-specific or other relevant factors that it believes to be reasonable under the circumstances. Estimates are periodically reviewed in light of reasonable changes in circumstances, facts and experience. Changes in estimates are recorded in the period in which they become known. Actual results could differ from those estimates or assumptions.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

Unaudited pro forma information

The accompanying unaudited pro forma consolidated balance sheet as of March 31, 2018 has been prepared to give effect, upon the completion of the proposed IPO, to (i) the conversion of all outstanding shares of convertible preferred stock into 19,157,360 shares of common stock and (ii) all outstanding warrants to purchase shares of series seed preferred stock becoming warrants to purchase shares of common stock, as if the proposed IPO had occurred on March 31, 2018.

In the accompanying consolidated statement of operations, the unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended March 31, 2018 has been prepared to give effect, upon the completion of the proposed IPO, to (i) the conversion of all outstanding shares of convertible preferred stock into shares of common stock and (ii) all outstanding warrants to purchase shares of series seed preferred stock becoming warrants to purchase shares of common stock as if the proposed IPO had occurred on the later of April 1, 2017 or the issuance date of the convertible preferred stock or the warrants.

Foreign currency and currency translation

The functional currency for the Company's wholly owned foreign subsidiary, Replimune UK, is the British Pound. Assets and liabilities of Replimune UK are translated into United States dollars at the exchange rate in effect on the balance sheet date. Revenues and expenses are translated at the average exchange rate in effect during the period. Unrealized translation gains and losses are recorded as a cumulative translation adjustment, which is included in the consolidated statements of convertible preferred stock and stockholders' deficit as a component of accumulated other comprehensive loss. Adjustments that arise from exchange rate changes on transactions denominated in a currency other than the local currency are included in other income (expense), net in the consolidated statements of operations as incurred.

Concentrations of credit risk and of significant suppliers

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents as well as short-term investments. The Company deposits its cash in financial institutions in amounts that may exceed federally insured limits, and has not experienced any losses on such accounts and does not believe it is exposed to any unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

The Company relies, and expects to continue to rely, on a small number of vendors to manufacture supplies and raw materials for its development programs. These programs could be adversely affected by a significant interruption in these manufacturing services or the availability of raw materials.

Cash and cash equivalents

The Company considers all highly liquid investments with original maturities of three months or less at date of purchase to be cash equivalents. Cash equivalents consisted of money market funds at March 31, 2018. As of March 31, 2017 and 2018, cash equivalents consisted of $0 and $4,130, respectively.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

Restricted cash

The Company maintains certain minimum balances in segregated bank accounts in connection with its corporate credit cards. As of March 31, 2017 and 2018, restricted cash consisted of $75 and $78, respectively. These amounts have been classified as non-current assets on the Company's consolidated balance sheets.

Short-term investments

The Company's short-term investments are classified as available-for-sale and are carried at fair value, with the unrealized gains and losses reported as a component of accumulated other comprehensive income (loss) in stockholders' equity (deficit). Realized gains and losses and declines in value determined to be other than temporary are based on the specific identification method and are included as a component of other income (expense), net in the consolidated statements of operations.

The Company evaluates its short-term investments with unrealized losses for other-than-temporary impairment. When assessing short-term investments for other-than-temporary declines in value, the Company considers such factors as, among other things, how significant the decline in value is as a percentage of the original cost, how long the market value of the investment has been less than its original cost, the Company's ability and intent to retain the short-term investment for a period of time sufficient to allow for any anticipated recovery in fair value and market conditions in general. If any adjustment to fair value reflects a decline in the value of the short-term investment that the Company considers to be "other than temporary," the Company reduces the short-term investment to fair value through a charge to the consolidated statements of operations. No such adjustments were necessary during the periods presented.

The Company's short-term investments as of March 31, 2017 and 2018 had original maturities of less than one year.

Deferred offering costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of proceeds generated as a result of the offering. Should an in-process equity financing be abandoned, the deferred offering costs will be expensed immediately as a charge to operating expenses in the consolidated statements of operations. The Company did not record any deferred offering costs as of March 31, 2017 or 2018.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

Property, plant and equipment

Property, plant and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation and amortization expense is recognized using the straight-line method over the estimated useful lives of the respective assets as follows:

	Estimated useful life
Office equipment	5 years
Computer equipment	3 years
Plant and laboratory equipment	5 years
Leasehold improvements	Lesser of lease term or 10 years

Costs for capital assets not yet placed into service are capitalized as construction-in-progress and depreciated in accordance with the above guidelines once placed into service. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in loss from operations. Expenditures for repairs and maintenance are charged to expense as incurred.

Impairment of long-lived assets

Long-lived assets consist of property, plant and equipment. Long-lived assets to be held and used are tested for recoverability whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Factors that the Company considers in deciding when to perform an impairment review include significant underperformance of the business in relation to expectations, significant negative industry or economic trends and significant changes or planned changes in the use of the assets. If an impairment review is performed to evaluate a long-lived asset group for recoverability, the Company compares forecasts of undiscounted cash flows expected to result from the use and eventual disposition of the long-lived asset group to its carrying value. An impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of an asset group are less than its carrying amount. The impairment loss would be based on the excess of the carrying value of the impaired asset group over its fair value, determined based on discounted cash flows. To date, the Company has not recorded any impairment losses on long-lived assets.

Deferred rent

The Company recognizes rent expense on a straight-line basis over the respective lease terms and has recorded deferred rent for rent expense incurred but not yet paid.

Fair value measurements

Certain assets and liabilities of the Company are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company's short-term investments, cash equivalents and warrant liability are carried at fair value, determined according to the fair value hierarchy described above (see Note 3). The carrying values of research and development incentives receivable, other current assets, accounts payable and accrued expenses and other current liabilities approximate their fair values due to the short-term nature of these assets and liabilities.

Warrant liability

The Company classifies warrants to purchase shares of series seed preferred stock (see Note 8) as a liability on its consolidated balance sheets as these warrants to purchase shares of series seed preferred stock are free-standing financial instruments that may require the Company to transfer assets upon exercise. The warrant liability was initially recorded at fair value upon the date of the warrants' issuance and is subsequently remeasured to fair value at each reporting date. Changes in the fair value of the warrant liability are recognized as a component of other income (expense), net in the consolidated statements of operations. Changes in the fair value of the warrant liability will continue to be recognized until the warrants to purchase shares of series seed preferred stock are exercised, expire or qualify for equity classification.

The Company utilizes the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value the warrant liability. The Company assesses these assumptions and estimates on a quarterly basis as additional information impacting assumptions is obtained. Estimates and assumptions impacting the fair value measurement include the expected stock price volatility, the expected term of the warrant, the risk-free interest rate for a period that approximates the expected term of the warrant, and the Company's expected dividend yield (see Note 3).

Segment information

The Company manages its operations as a single operating segment for the purposes of assessing performance and making operating decisions. The Company's current focus is on developing oncolytic immunotherapies for the treatment of cancer.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

Research and development costs

Research and development costs are expensed as incurred. Research and development expenses consist of costs incurred in performing research and development activities, including salaries, stock-based compensation and benefits, facilities costs and laboratory supplies, depreciation and external costs of outside vendors engaged to conduct preclinical development, clinical development activities and clinical trials as well as to manufacture clinical trial materials. Non-refundable prepayments for goods or services that will be used or rendered for future research and development activities are deferred and capitalized. Such amounts are recognized as an expense as the goods are delivered or the related services are performed, or until it is no longer expected that the goods will be delivered or the services rendered.

Research contract costs and accruals

The Company has entered into various research and development-related contracts with companies both inside and outside of the United States. These agreements are generally cancelable, and related costs are recorded as research and development expenses as incurred. The Company records accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies or clinical trials, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Patent costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses.

Stock-based compensation

The Company measures all stock-based awards granted to employees and directors based on the fair value on the date of the grant and recognizes compensation expense for those awards over the requisite service period, which is generally the vesting period of the respective award. The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model, which requires inputs based on certain subjective assumptions, including the expected stock price volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option, and the Company's expected dividend yield (see Note 10). Forfeitures are accounted for as they occur. To date, the Company has issued stock-based awards with only service-based vesting conditions and records the expense for these awards using the straight-line method.

For stock-based awards granted to consultants and non-employees, compensation expense is recognized over the shorter of the vesting period or the period during which services are rendered by such consultants and non-employees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of the Company's common stock and updated assumption inputs in the Black-Scholes option-pricing model.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

The Company classifies stock-based compensation expense in its consolidated statements of operations in the same manner in which the award recipient's payroll costs are classified or in which the award recipient's service payments are classified.

Research and development incentives and receivable

The Company, through its subsidiary in the United Kingdom, receives reimbursements of certain research and development expenditures as part of a United Kingdom government's research and development tax reliefs program. Under the program, a percentage of qualifying research and development expenses incurred by the Company's subsidiary in the United Kingdom are reimbursed up to 14.5%.

Management has assessed the Company's research and development activities and expenditures to determine which activities and expenditures are likely to be eligible under the research and development incentive program described above. At each period end, management estimates the reimbursement available to the Company based on available information at the time.

The Company recognizes income from the research and development incentives when the relevant expenditure has been incurred, the associated conditions have been satisfied and there is reasonable assurance that the reimbursement will be received. The Company records these research and development incentives as other income. The research and development incentives receivable represents an amount due in connection with the above program. The Company recorded other income from research and development incentives of $1,442 and $2,267 during the years ended March 31, 2017 and 2018, respectively, in the consolidated statements of operations and a research and development incentives receivable of $1,407 and $2,389 as of March 31, 2017 and 2018, respectively, on the consolidated balance sheets.

Comprehensive loss

Comprehensive loss includes net loss as well as other changes in stockholders' equity (deficit) that result from transactions and economic events other than those with stockholders. For the year ended March 31, 2017, comprehensive loss included $(1,437) of foreign currency translation adjustments. For the year ended March 31, 2018, comprehensive loss included $2,376 of foreign currency translation adjustments and $(65), respectively, of unrealized losses on short-term investments, net of tax.

Income taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in the consolidated financial statements or in the Company's tax returns. Deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Changes in deferred tax assets and liabilities are recorded in the provision for income taxes. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence, that it is more likely than not that all or a portion of the deferred tax assets will not be realized,

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Notes to consolidated financial statements (Continued)

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a valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies.

The Company accounts for uncertainty in income taxes recognized in the consolidated financial statements by applying a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination by the taxing authorities. If the tax position is deemed more-likely-than-not to be sustained, the tax position is then assessed to determine the amount of benefit to recognize in the consolidated financial statements. The amount of the benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement. The provision for income taxes includes the effects of any resulting tax reserves, or unrecognized tax benefits, that are considered appropriate as well as the related net interest and penalties.

Net income (loss) per share

The Company follows the two-class method when computing net income (loss) per share as the Company has issued shares that meet the definition of participating securities. The two-class method determines net income (loss) per share for each class of common and participating securities according to dividends declared or accumulated and participation rights in undistributed earnings. The two-class method requires income available to common stockholders for the period to be allocated between common and participating securities based upon their respective rights to receive dividends as if all income for the period had been distributed.

Basic net income (loss) per share attributable to common stockholders is computed by dividing the net income (loss) attributable to common stockholders by the weighted average number of shares of common stock outstanding for the period. Diluted net income (loss) attributable to common stockholders is computed by adjusting net income (loss) attributable to common stockholders to reallocate undistributed earnings based on the potential impact of dilutive securities. Diluted net income (loss) per share attributable to common stockholders is computed by dividing the diluted net income (loss) attributable to common stockholders by the weighted average number of shares of common stock outstanding for the period, including potential dilutive common shares assuming the dilutive effect of common stock equivalents.

Common A shares are excluded when computing net income (loss) per share as they have nominal economic rights.

The Company's convertible preferred stock contractually entitles the holders of such shares to participate in dividends but contractually do not require the holders of such shares to participate in losses of the Company. Accordingly, in periods in which the Company reports a net loss, such losses are not allocated to such participating securities. In periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders, since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive.

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Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

Recently adopted accounting pronouncements

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-09, *Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting* ("ASU 2016-09"). ASU 2016-09 addresses several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, an option to recognize gross share compensation expense with actual forfeitures recognized as they occur, and classification on the consolidated statements of cash flows. Certain of these changes are required to be applied retrospectively, while other changes are required to be applied prospectively. The Company adopted ASU 2016-09 as of the required effective date of April 1, 2017 and elected prospectively to account for forfeitures as they occur rather than apply an estimated forfeiture rate to share-based compensation expense. The adoption of ASU 2016-09 did not have a material impact on the Company's financial position, results of operations or cash flows.

In November 2015, the FASB issued ASU No. 2015-17, *Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes* ("ASU 2015-17"). ASU 2015-17 requires deferred tax liabilities and assets to be classified as non-current in the consolidated balance sheet. The amendment may be applied either prospectively to all deferred tax liabilities and assets or retrospectively to all periods presented. The Company adopted ASU 2015-17 retrospectively to all periods presented as of March 31, 2017, and its adoption had no impact on the Company's financial position, results of operations or cash flows.

In November 2014, the FASB issued ASU No. 2014-16, *Determining Whether the Host Contract in a Hybrid Financial Instrument Issued in the Form of a Share Is More Akin to Debt or to Equity* ("ASU 2014-16"). The guidance requires an entity to determine the nature of the host contract by considering all stated and implied substantive terms and features of the hybrid financial instrument, weighing each term and feature on the basis of the relevant facts and circumstances (commonly referred to as the whole-instrument approach). The Company adopted ASU 2014-16 as of the required effective date of April 1, 2016 and reflected the adoption on a modified retrospective basis, and its adoption had no impact on the Company's financial position, results of operations or cash flows.

In August 2014, the FASB issued ASU No. 2014-15, *Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern* (Subtopic 205-40) ("ASU 2014-15"). The amendments in this update explicitly require a company's management to assess an entity's ability to continue as a going concern and to provide related footnote disclosures in certain circumstances. The Company adopted ASU 2014-15 as of the required effective date of March 31, 2017. This guidance relates to footnote disclosure only, and its adoption had no impact on the Company's financial position, results of operations or cash flows.

Recently issued accounting pronouncements

In July 2017, the FASB issued ASU No. 2017-11, *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815) I. Accounting for Certain Financial Instruments with Down Round Features II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception* ("ASU 2017-11"). Part I applies to entities that issue financial instruments such as warrants, convertible debt or convertible preferred stock that contain

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

down-round features. Part II replaces the indefinite deferral for certain mandatorily redeemable noncontrolling interests and mandatorily redeemable financial instruments of nonpublic entities contained within Accounting Standards Codification ("ASC") Topic 480 with a scope exception and does not impact the accounting for these mandatorily redeemable instruments. ASU 2017-11 is required to be adopted for annual periods beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently evaluating the impact that the adoption of ASU 2017-11 will have on its consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting* ("ASU 2017-09"), which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted. The Company will apply ASU 2017-09 to any changes to the terms or conditions of share-based payment awards after the adoption date.

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash* ("ASU 2016-18"), which requires restricted cash to be presented with cash and cash equivalents on the consolidated statements of cash flows and disclosure of how the consolidated statements of cash flows reconciles to the balance sheet if restricted cash is shown separately from cash and cash equivalents on the balance sheet. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted. Upon adoption on April 1, 2018, the amount of cash and cash equivalents previously presented on the consolidated statements of cash flows for the years ended March 31, 2017 and 2018 will increase by $75 and $78, respectively, to reflect the inclusion of restricted cash. Additionally, transfers between restricted and unrestricted cash will no longer be presented as a component of the Company's investing activities.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfer of Assets Other than Inventory* ("ASU 2016-16"), which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The Company is currently evaluating the impact that the adoption of ASU 2016-16 will have on its consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the consolidated statements of cash flows. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The Company is currently evaluating the impact that the adoption of ASU 2016-15 will have on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02*, Leases (Topic 842)* ("ASU 2016-02"), which sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

contract (i.e., lessees and lessors). The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight-line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. Leases with a term of 12 months or less will be accounted for similar to existing guidance for operating leases today. ASU 2016-02 supersedes the previous leases standard, ASC 840, Leases. The standard is effective for public entities for annual periods beginning after December 15, 2018 including interim periods within those fiscal years. Early adoption is permitted. The Company is currently evaluating the impact that the adoption of ASU 2016-02 will have on its consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers* (Topic 606) ("ASU 2014-09"), which supersedes existing revenue recognition guidance under GAAP. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The standard defines a five-step process to achieve this principle, and will require companies to use more judgment and make more estimates than under the current guidance. The Company expects that these judgments and estimates will include identifying performance obligations in the customer contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. ASU 2014-09 also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers* (Topic 606): Deferral of the Effective Date, which delays the effective date of ASU 2014-09 such that the standard is effective for public entities for annual periods beginning after December 15, 2017 and for interim periods within those fiscal years. Early adoption of the standard is permitted for annual periods beginning after December 15, 2016. The adoption of ASU 2014-09 is not expected to have an impact on the Company's consolidated financial statements as the Company does not currently have any revenue-generating arrangements.

3. Fair value of financial assets and liabilities

The following tables present information about the Company's financial assets and liabilities measured at fair value on a recurring basis:

	Fair value measurements as of March 31, 2017 using:			
	Level 1	Level 2	Level 3	Total
Liabilities:				
Warrant liability	$ —	$ —	$ 670	$ 670
	$ —	$ —	$ 670	$ 670

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

	Fair value measurements as of March 31, 2018 using:			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	$ —	$ 4,130	$ —	$ 4,130
Commercial paper	—	27,998	—	$ 27,998
Corporate debt securities	—	15,970	—	15,970
	$ —	$ 48,098	$ —	$ 48,098
Liabilities:				
Warrant liability	$ —	$ —	$ 1,642	$ 1,642
	$ —	$ —	$ 1,642	$ 1,642

During the years ended March 31, 2017 and 2018, there were no transfers between levels.

Valuation of cash equivalents and short-term investments

Money market funds, commercial paper and corporate debt securities were valued by the Company using quoted prices in active markets for similar securities, which represent a Level 2 measurement within the fair value hierarchy.

Valuation of warrant liability

The warrant liability is related to the warrants to purchase shares of series seed preferred stock (see Note 8). The fair value of the warrant liability was determined based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy.

The Company used the Black-Scholes option-pricing model, which incorporates assumptions and estimates, to value the warrant liability. Key estimates and assumptions impacting the fair value measurement include (i) the expected term of the warrants, (ii) the risk-free interest rate, (iii) the expected dividend yield and (iv) expected volatility of the price of the underlying series seed preferred stock. The Company estimated the fair value per share of the underlying series seed preferred stock based, in part, on the results of third-party valuations and additional factors deemed relevant. The risk-free interest rate was determined by reference to the U.S. Treasury yield curve for time periods approximately equal to the remaining contractual term of the warrants. The Company estimated a 0% expected dividend yield based on the fact that the Company has never paid or declared dividends and does not intend to do so in the foreseeable future. As the Company is a private company and lacks company-specific historical and implied volatility information of its stock, the expected stock volatility was based on the historical volatility of publicly traded peer companies for a term equal to the remaining expected term of the warrants.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

The following table presents the unobservable inputs of the warrant liability:

	Year ended March 31,	
	2017	2018
Risk-free interest rate	1.33%	2.69%
Expected dividend yield	0%	0%
Expected term (in years)	8.5	7.5
Expected volatility	75.0%	65.8%

The following table presents a roll forward of the warrant liability:

	Warrant liability
Balance at March 31, 2016	$ 520
Change in fair value	150
Balance at March 31, 2017	670
Change in fair value	972
Balance at March 31, 2018	$ 1,642

4. Short-term investments

Short-term investments by investment type consisted of the following as of March 31, 2018:

	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Commercial paper	$ 28,028	$ 2	$ (32)	$ 27,998
Corporate debt securities	16,005		(35)	15,970
	$ 44,033	$ 2	$ (67)	$ 43,968

The Company did not have any short-term investments as of March 31, 2017.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

5. Property, plant and equipment, net

Property, plant and equipment, net consisted of the following:

	March 31,	
	2017	2018
Leasehold improvements	$ 154	$ 154
Office equipment	49	49
Computer equipment	67	87
Plant and laboratory equipment	219	336
	489	626
Less: Accumulated depreciation and amortization	(147)	(256)
	$ 342	$ 370

Depreciation and amortization expense was $122 and $109 for the years ended March 31, 2017 and 2018, respectively.

6. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consisted of the following:

	March 31,	
	2017	2018
Accrued research and development costs	$ 649	$ 949
Accrued compensation and benefits costs	514	949
Accrued professional fees	440	1,094
Deferred rent	23	26
Other	36	153
	$ 1,662	$ 3,171

7. Convertible preferred stock

As of March 31, 2017, the Company's certificate of incorporation, as then in effect, authorized the Company to issue 1,114,553 shares of par value $0.001 per share convertible preferred stock. As of March 31, 2018, the Company's certificate of incorporation, as amended and restated, authorized the Company to issue 1,975,968 shares of par value $0.001 per share convertible preferred stock.

The Company has issued series seed convertible preferred stock (the "series seed preferred stock"), series A convertible preferred stock (the "series A preferred stock") and series B convertible preferred stock (the "series B preferred stock"). The series seed preferred stock, series A preferred stock and series B preferred stock are collectively referred to as the "preferred stock."

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

In May 2015, the Company issued and sold 200,000 shares of series seed preferred stock at a price of $10.00 per share for cash proceeds of $2,000. In connection with the series seed preferred stock issuance, the Company issued 50,000 warrants to purchase shares of series seed preferred stock (See Note 8).

In September 2015, the Company entered into a subscription agreement (the "Subscription Agreement") for the sale of series A preferred stock in two investment closings of (i) first tranche shares of series A preferred stock and (ii) second tranche shares of series A preferred stock. In September 2015, the Company issued and sold 432,276 first tranche shares of series A preferred stock at a price of $34.70 per share for cash proceeds of $15,000. Under the Subscription Agreement, the issuance and sale of second tranche shares of series A preferred stock was subject to a Milestone, defined as the filing of an Investigational New Drug application by the Company (or a subsidiary thereof) with the U.S. Food and Drug Administration in respect of the Company's first clinical trial becoming effective. In March 2017, Replimune UK's board of directors, including the required number of investor directors, waived the Milestone required by the Subscription Agreement and the Company issued and sold 432,277 second tranche shares of series A preferred stock at a price of $34.70 per share for cash proceeds of $15,000. The Company determined that the future tranche obligation of the Subscription Agreement did not meet the definition of a freestanding financial instrument because, while separately exercisable, it was not legally detachable. Further, the Company determined that, while embedded, the future tranche obligation of the Subscription Agreement did not require bifurcation for accounting purposes as it was clearly and closely related to the economic characteristics and risks of the series A preferred stock and would not meet the definition of a derivative on a standalone basis.

In July 2017, the Company issued and sold 861,415 shares of series B preferred stock at a price of $63.79 per share for cash proceeds of $54,950, net of issuance costs of $198.

As of each balance sheet date, preferred stock consisted of the following:

	March 31, 2017				
	Preferred shares authorized	Preferred shares issued and outstanding	Carrying value	Liquidation preference	Common stock issuable upon conversion
Series seed preferred stock	250,000	200,000	$ 1,609	$ 2,000	1,989,376
Series A preferred stock	864,553	864,553	30,000	30,000	8,599,601
	1,114,553	1,064,553	$ 31,609	$ 32,000	10,588,977

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Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

	March 31, 2018				
	Preferred shares authorized	Preferred shares issued and outstanding	Carrying value	Liquidation preference	Common stock issuable upon conversion
Series seed preferred stock	250,000	200,000	$ 1,609	$ 2,000	1,989,376
Series A preferred stock	864,553	864,553	30,000	30,000	8,599,601
Series B preferred stock	861,415	861,415	54,752	54,950	8,586,383
	1,975,968	1,925,968	$ 86,361	$ 86,950	19,157,360

The holders of the preferred stock have the following rights and preferences:

Voting

The holders of the preferred stock are entitled to vote, together with the holders of common stock, on all matters submitted to the stockholders for a vote and are entitled to the number of votes equal to the number of whole shares of common stock into which such holders of preferred stock could convert on the record date of for determination of stockholders entitled to vote. The holders of preferred stock and common stock, voting as a single class, are entitled to elect two directors of the Company. Additionally, the holders of the series seed preferred stock are entitled to elect two directors of the Company, the holders of the series A preferred stock are entitled to elect one director of the Company and the holders of at least 55% of the outstanding series B preferred stock are entitled to elect two directors of the Company.

Conversion

Each share of preferred stock is convertible into common stock, at any time, at the option of the holder, and without the payment of additional consideration, at the applicable conversion ratio then in effect for each series of preferred stock and subject to adjustment in accordance with anti-dilution provisions. In addition, each share of preferred stock will be converted into common stock at the applicable conversion ratio then in effect for each series of preferred stock upon the earlier of (i) the closing of a firm commitment underwritten public offering of the Company's common stock with gross proceeds to the Company of at least $30,000 and at a price per share of not less than $9.62, subject to appropriate adjustment in the event of any stock split, stock dividend, combination or other similar recapitalization, or (ii) a date specified by vote or written consent of the holders of 75% of the outstanding preferred stock (voting together as a single class on an as-converted basis). For any events of deemed liquidation (as defined below) in which series B preferred stock investors would receive less than their full liquidation preference, a further approval of holders of 55% of the outstanding series B preferred stock is required. As of March 31, 2017 and 2018, each share of preferred stock was convertible into one share of common stock.

The conversion ratio for each series of preferred stock is determined by dividing the original issue price of each series of preferred stock by the conversion price of each series (as defined below). As of March 31, 2017 and 2018, the series seed preferred stock original issue price and series seed preferred stock

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conversion price were $10.00 per share and $1.01 per share, respectively. As of March 31, 2017 and 2018, the series A preferred stock original issue price and Series A preferred stock conversion price were $34.70 per share and $3.49 per share, respectively. As of March 31, 2017 and 2018, the series B preferred stock original issue price and series B preferred stock conversion price were $63.79 per share and $6.41 per share, respectively. Such series seed preferred stock original issue price, series A preferred stock original issue price and series B preferred stock original issue price and series seed preferred stock conversion price, series A preferred stock conversion price and series B preferred stock conversion price, and the rate at which each series of preferred stock may be converted into common stock, are subject to appropriate adjustment from time to time in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the preferred stock. The series seed preferred stock conversion price, series A preferred stock conversion price and series B preferred stock conversion price are also subject to adjustments based on weighted-average anti-dilution provisions set forth in the Company's certificate of incorporation, as amended and restated, in the event that additional securities are issued at a purchase price less than the series seed preferred stock conversion price, series A preferred stock conversion price or series B preferred stock conversion price then in effect.

Dividends

The holders of the preferred stock are entitled to be paid noncumulative dividends if and when declared by the Company's board of directors. The Company may not pay any dividends on shares of common stock of the Company unless the holders of preferred stock then outstanding simultaneously receive dividends at the same rate and same time as dividends paid with respect to common stock. Dividends shall accrue on a daily basis assuming a 365-day year, and shall be paid in cash. Through March 31, 2017 and 2018, no dividends have been declared or paid.

Liquidation preference

In the event of any voluntary or involuntary liquidation event, dissolution, winding up of the Company or an event of deemed liquidation, each holder of the then outstanding series B preferred stock will be entitled to receive, prior and in preference to any distributions to the holders of series A preferred stock, series seed preferred stock and common stock, an amount equal to the greater of (i) the applicable original issue price, plus any declared but unpaid dividends thereon, or (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation event.

After the payment of all preferential amounts to the holders of series B preferred stock, each holder of the then outstanding series A preferred stock will be entitled to receive, prior and in preference to any distributions to the holders of series seed preferred stock and common stock, an amount equal to the greater of (i) the applicable original issue price, plus any declared but unpaid dividends thereon, or (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation event.

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Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

After the payment of all preferential amounts to the holders of series A preferred stock, each holder of the then outstanding series seed preferred stock will be entitled to receive, prior and in preference to any distributions to the holders of common stock, an amount equal to the greater of (i) the applicable original issue price, plus any declared but unpaid dividends thereon or (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation event.

After payments have been made in full to the holders of preferred stock, then, to the extent available, the remaining amounts will be distributed among the holders of the shares of common stock, the holders of series B preferred stock and the holders of series A preferred stock, pro rata based on the number of shares held by each holder, assuming full conversion of all such preferred stock.

The holders of series B preferred stock and series A preferred stock are subject to a participation cap (as defined below) for remaining amounts that will be distributed, which is $127.58 per share for the series B preferred stock and $69.40 per share for the series A preferred stock.

To the extent available, the remaining amounts greater than the total of the participation caps will be distributed among the holders of the shares of common stock, pro rata based on the number of shares held by each holder.

Unless a majority of the holders of the then outstanding preferred stock, on an as-if-converted basis voting together as a single class, elect otherwise, an event of deemed liquidation shall include a merger or consolidation (other than one in which stockholders of the Company own a majority by voting power of the outstanding shares of the surviving or acquiring corporation), sale, transfer or exclusive license of substantially all of the assets of the Company. The preferred stock is conditionally redeemable upon an event of deemed liquidation, which is defined as any (i) merger, consolidation or acquisition, involving the Company or its Subsidiary Undertaking, in which the Company or its subsidiary undertaking is not the surviving entity, (ii) an asset sale, (iii) a share sale, (iv) an initial public offering, (v) the occurrence of a change of control in respect of the Company, (vi) a winding up (vii) or any other a return of capital to stockholders (other than a conversion, redemption or repurchase of shares made in accordance with the applicable governing documents).

Redemption

The Company's certificate of incorporation, as amended and restated, does not provide redemption rights to the holders of preferred stock.

The holders of shares of convertible preferred stock have liquidation rights in the event of a deemed liquidation that, in certain situations, are not solely within the control of the Company. Therefore, convertible preferred stock is classified outside of stockholders' deficit.

Upon issuance of each class of preferred stock, the Company assessed the embedded conversion and liquidation features of the securities. The Company determined that each class of preferred stock did not require the Company to separately account for the liquidation features. The Company also concluded that no beneficial conversion feature existed upon the issuance date of the series A preferred stock or series B

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(Amounts in thousands, except share and per share amounts)

preferred stock as of March 31, 2017 or 2018. However, the Company did conclude that a beneficial conversion feature existed upon the issuance date of the series seed preferred stock. As the series seed preferred stock is convertible into common stock, at any time, at the option of the holder, and without the payment of additional consideration, at the applicable conversion ratio then in effect, the Company recognized the accretion of the beneficial conversion feature as a deemed dividend immediately upon the issuance of the series seed preferred stock.

8. Preferred stock warrants

In connection with the issuance of the series seed preferred stock, the Company issued to the holders of the series seed preferred stock warrants for the purchase of 50,000 shares of series seed preferred stock, which became fully vested and exercisable in the year of issuance. The warrants to purchase shares of series seed preferred stock were issued at an exercise price of $10.00 per share and expire on the earlier of September 16, 2025 or a qualified change of control event.

The issuance date fair value of the warrants to purchase shares of series seed preferred stock was $391 and was recorded as a liability with a corresponding reduction in the carrying value of the series seed preferred stock. As of March 31, 2017 and 2018, the fair value of the warrant liability was $670 and $1,642, respectively. The Company recognized a loss of $150 and $972 within other income (expense), net in the consolidated statements of operations for the years ended March 31, 2017 and 2018, respectively, related to the change in fair value of the warrant liability.

9. Common stock

As of March 31, 2017 and 2018, the Company was authorized to issue 27,314,288 shares and 27,314,288 shares, respectively, of par value $0.001 per share common stock (including 26,258 authorized shares of common A stock). In July 2017, the Company issued and sold 26,258 shares of par value $0.001 per share common A stock for nominal cash proceeds. The voting, dividend and liquidation rights of the holders of the Company's common stock is subject to and qualified by the rights, powers and preferences of the holders of the preferred stock as set forth above.

As of March 31, 2017 and 2018, the Company had reserved 13,746,206 shares and 22,306,801 shares, respectively, of common stock for the conversion of outstanding shares of preferred stock (see Note 7), the exercise of outstanding stock options, the number of shares remaining available for grant under the Company's 2017 Equity Compensation Plan (see Note 10) and the exercise of the outstanding warrants to purchase shares of series seed preferred stock (see Note 8), assuming all warrants to purchase shares of series seed preferred stock became warrants to purchase shares of common stock at the applicable conversion ratio.

Voting

Each share of common stock, including common A stock, entitles the holder to one vote, together with the holders of preferred stock, on all matters submitted to the stockholders for a vote. The holders of common

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stock, together with the holders of preferred stock and voting as a single class, are entitled to elect two directors of the Company by vote of a majority of such shares.

Dividends

Common stockholders are entitled to receive dividends, as may be declared by the Company's board of directors, if any, subject to the preferential dividend rights of the preferred stock. Through March 31, 2017 and 2018, no cash dividends have been declared or paid.

Each share of common A stock is entitled to receive dividends, as may be declared by the Company's board of directors, if any, equal to a maximum of 100% of each share's par value. Upon an event of deemed liquidation, common A stock is entitled to receive dividends equal to a maximum of 300% of each share's par value.

10. Stock-based compensation

2015 Enterprise Management Incentive Share Option Plan

The 2015 Enterprise Management Incentive Share Option Plan of Replimune UK (the "2015 Plan") provided for Replimune UK to grant incentive stock options, non-statutory stock options, stock awards, stock units, stock appreciation rights and other stock-based awards. Incentive stock options are granted only to the Company's employees, including officers and directors who are also employees. Non-statutory stock options are granted to employees, members of the board of directors, outside advisors and consultants of the Company.

The maximum number of common shares that could be issued under the 2015 Plan was 2,659,885 as of March 31, 2017, of which 1,729,858 remained available for future grants as of March 31, 2017.

2017 Equity Compensation Plan

In July 2017, in conjunction with the Reorganization, the 2015 Plan was terminated and all awards were cancelled with replacement awards issued under the 2017 Equity Compensation Plan (the "2017 Plan"). Subsequent to the Reorganization, no additional grants will be made under the 2015 Plan and any outstanding awards under the 2015 Plan will continue with their original terms. The Company concluded that the cancellation of the 2015 Plan and issuance of replacement awards under the 2017 Plan was a modification with no change in the material rights and preferences and therefore no recorded change in the fair value of each respective award.

The Company's 2017 Plan provides for the Company to grant incentive stock options or non-statutory stock options, stock awards, stock units, stock appreciation rights and other stock-based awards. Incentive stock options may be granted only to the Company's employees, including officers and directors who are also employees. Restricted stock awards and non-statutory stock options may be granted to employees, officers, members of the board of directors, advisors and consultants of the Company. The maximum number of common shares that may be issued under the 2017 Plan was 2,659,885 as of March 31, 2018, of which 131,850 remained available for future grants as of March 31, 2018. Shares with respect to which awards have expired, terminated, surrendered or cancelled under the 2017 Plan without having been fully

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exercised will be available for future awards under the 2017 Plan. In addition, shares of common stock that are tendered to the Company by a participant to exercise an award are added to the number of shares of common stock available for the grant of awards.

The 2017 Plan is and the 2015 Plan was administered by the board of directors or, at the discretion of the board of directors, by a committee of the board of directors. However, the board of directors shall administer and approve all grants made to non-employee directors. The exercise prices, vesting and other restrictions are determined at the discretion of the board of directors, except that the exercise price per share of incentive stock options may not be less than 100% of the fair market value of the common stock on the date of grant (or 110% of fair value in the case of an award granted to employees who hold more than 10% of the total combined voting power of all classes of stock at the time of grant) and the term of stock options may not be greater than five years for an incentive stock option granted to a 10% stockholder and greater than ten years for all other options granted. Stock options awarded under both plans expire ten years after the grant date, unless the board of directors sets a shorter term. Vesting periods for both plans are determined at the discretion of the board of directors. Incentive stock options granted to employees and non-statutory options granted to employees, officers, members of the board of directors, advisors, and consultants of the Company typically vest over four years.

Stock option valuation

The fair value of stock option grants is estimated using the Black-Scholes option-pricing model. The Company historically has been a private company and lacks company-specific historical and implied volatility information. Therefore, it estimates its expected stock volatility based on the historical volatility of a publicly traded set of peer companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. For options with service-based vesting conditions, the expected term of the Company's stock options has been determined utilizing the "simplified" method for awards that qualify as "plain-vanilla" options. The expected term of stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company has never paid cash dividends and does not expect to pay any cash dividends in the foreseeable future.

The following table presents, on a weighted-average basis, the assumptions that the Company used to determine the grant-date fair value of stock options granted to employees and directors:

	Year ended March 31,	
	2017	**2018**
Risk-free interest rate	1.67%	2.01%
Expected term (in years)	6.0	6.0
Expected volatility	75.0%	75.0%
Expected dividend yield	0%	0%

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The following table presents the assumptions that the Company used to determine the grant-date fair value of stock options granted to a non-employee:

	Year ended March 31, 2018
Risk-free interest rate	2.29%
Expected term (in years)	10.0
Expected volatility	75.0%
Expected dividend yield	0%

The Company did not grant stock options to non-employees during the year ended March 31, 2017.

Stock options

The following table summarizes the Company's stock option activity since March 31, 2017:

	Number of shares	Weighted average exercise price	Weighted average contractual term (years)	Aggregate intrinsic value
Outstanding as of March 31, 2017	930,027	$ 1.63	9.08	$ 93
Granted	1,598,008	3.35	9.39	
Exercised	(7,788)	3.30		
Outstanding as of March 31, 2018	2,520,247	$ 2.72	8.91	$ 2,808
Options exercisable as of March 31, 2018	592,412	$ 1.84	8.22	$ 1,184
Options vested and expected to vest as of March 31, 2018	2,520,247	$ 2.72	8.91	$ 2,808

The aggregate intrinsic value of stock options is calculated as the difference between the exercise price of the stock options and the fair value of the Company's common stock for those stock options that had exercise prices lower than the fair value of the Company's common stock.

The weighted average grant-date fair value per share of stock options granted during the years ended March 31, 2017 and 2018 was $0.82 and $1.92, respectively.

The total fair value of options vested during the years ended March 31, 2017 and 2018 was $168 and $398, respectively.

As of March 31, 2017 and 2018 there were no outstanding unvested service-based stock options held by non-employees.

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Stock-based compensation

Stock-based compensation expense was classified in the consolidated statements of operations as follows:

	Year ended March 31,	
	2017	2018
Research and development	$ 65	$ 335
General and administrative	143	477
Total share based compensation expense	$ 208	$ 812

As of March 31, 2018, total unrecognized compensation cost related to the unvested stock-based awards was $2,765, which is expected to be recognized over a weighted average period of 2.66 years.

11. Income taxes

2017 U.S. tax reform

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Reform Act"), which significantly reforms the Internal Revenue Code of 1986, as amended (the "Code"). The Tax Reform Act, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from the existing top marginal rate of 35% to a flat rate of 21%, effective as of January 1, 2018; limitation of the deduction for net operating losses to 80% of annual taxable income and elimination of net operating loss carrybacks, in each case, for losses arising in taxable years beginning after December 31, 2017 (though any such tax losses may be carried forward indefinitely); and modifying or repealing many business deductions and credits.

The staff of the Securities and Exchange Commission issued Staff Accounting Bulletin No. 118 ("SAB 118") to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Reform Act. In connection with the initial analysis of the impact of the Tax Reform Act, the Company remeasured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21%. The remeasurement of the Company's deferred tax assets and liabilities was offset by a corresponding change in the Company's valuation allowance.

The Company is still in the process of analyzing the impact of the Tax Reform Act. Where the Company has been able to make reasonable estimates of the effects for which its analysis is not yet complete, the Company has recorded provisional amounts. The ultimate impact to the Company's consolidated financial statements of the Tax Reform Act may differ from the provisional amounts due to, among other things, additional analysis, changes in interpretations and assumptions the Company has made, additional regulatory guidance that may be issued, and actions the Company may take as a result of the Tax Reform Act. The accounting is expected to be complete when the Company's 2017 U.S. corporate income tax return is filed in 2018.

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Income taxes

During the years ended March 31, 2017 and 2018, the Company recorded no income tax benefits for the net operating losses incurred and capitalized start-up costs generated during the years then ended, due to its uncertainty of realizing a benefit from those items. The Company's net loss before income taxes were generated in the United States and the United Kingdom.

Net loss before income taxes for the years ended March 31, 2017 and 2018 were as follows:

	Year Ended March 31,	
	2017	2018
United States	$ (3,450)	$ (8,992)
Foreign (United Kingdom)	(4,254)	(10,710)
	$ (7,704)	$ (19,702)

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate for the years ended March 31, 2017 and 2018 is as follows:

	March 31,	
	2017	2018
U.S. Federal statutory income tax rate	(34.00)%	(21.00)%
State taxes, net of federal benefit	(2.4)	(2.6)
Research and development expenses	7.1	3.8
Remeasurement of deferred taxes as a result of tax reform	—	2.6
Foreign tax rate differential	8.8	2.2
Change in valuation allowance	19.2	14.0
Other	1.3	1.0
Effective income tax rate	0.00%	0.00%

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Components of the Company's deferred tax assets as of March 31, 2017 and 2018 were as follows:

	March 31,	
	2017	2018
Deferred tax assets:		
Foreign net operating loss carryforwards	$ 247	1,405
State net operating loss carryforwards	—	15
Capitalized start-up costs	1,661	3,340
Other	1	1
Total deferred tax assets	1,909	4,761
Deferred tax liabilities:		
Property, plant and equipment	(22)	(37)
Total deferred tax liabilities	(22)	(37)
Valuation allowance	(1,887)	(4,724)
Net deferred tax assets	$ —	$ —

As of March 31, 2017 and 2018, the Company had foreign net operating loss carryforwards of approximately $1,451 and $8,265 respectively, which can be carried forward indefinitely. As of March 31, 2018, the Company had state net operating loss carryforwards of $235 which will expire in 2038.

Changes in the valuation allowance for deferred tax assets during the years ended March 31, 2017 and 2018 related primarily to the increase in net operating loss carryforwards and capitalized start-up costs in 2018, and were as follows:

	March 31,	
	2017	2018
Valuation allowance as of beginning of year	$ 416	1,887
Increases recorded to income tax provision	1,471	3,347
Remeasurement of deferred taxes as a result of tax reform	—	(510)
Valuation allowance as of end of year	$ 1,887	$ 4,724

As of March 31, 2017 and 2018, the Company had not recorded any amounts for unrecognized tax benefits. The Company's policy is to record interest and penalties related to income taxes as part of its income tax provision. As of March 31, 2017 and 2018, the Company had no accrued interest or penalties related to uncertain tax positions and no amounts had been recognized in the Company's consolidated statements of operations and comprehensive loss.

The Company files income tax returns in the United States, Massachusetts and the United Kingdom as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by U.S. federal, state and foreign jurisdictions, where applicable. There

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are currently no pending tax examinations. The Company is open to future tax examination in the U.S. under statute from 2016 to the present and in the United Kingdom from 2015 to the present.

12. Net loss per share and unaudited pro forma net loss per share

Net loss per share

Basic and diluted net loss per share attributable to common stockholders was calculated as follows:

	Year ended March 31,	
	2017	2018
Numerator:		
Net loss attributable to common stockholders	$ (7,704)	$ (19,702)
Denominator:		
Weighted average common shares outstanding, basic and diluted	4,973,439	4,978,539
Net loss per share attributable to common stockholders, basic and diluted	$ (1.55)	$ (3.96)

The Company's potentially dilutive securities, which include stock options, preferred stock and warrants to purchase shares of series seed preferred stock, have been excluded from the computation of diluted net loss per share as the effect would be to reduce the net loss per share. Common A stock has been excluded from the computation of diluted net loss per share because the shares have nominal economic participation rights. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at each period end, from the computation of diluted net loss per share attributable to common stockholders for the periods indicated because including them would have had an anti-dilutive effect:

	Year ended March 31,	
	2017	2018
Options to purchase common stock	930,027	2,520,247
Convertible preferred stock (as converted to common stock)	10,588,977	19,157,360
Warrants to purchase shares of series seed preferred stock (as converted to common stock)	497,344	497,344
	12,016,348	22,174,951

Unaudited pro forma net loss per share attributable to common stockholders

The unaudited pro forma basic and diluted net loss per share attributable to common stockholders for the year ended March 31, 2018 has been prepared to give effect to adjustments arising upon the completion of the proposed IPO. The unaudited pro forma net loss attributable to common stockholders used in the calculation of unaudited pro forma basic and diluted net loss per share attributable to common stockholders does not include the effects of the warrant liability because the calculation gives effect, upon

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the proposed IPO, to (i) the conversion of shares of preferred stock into shares of common stock and (ii) the warrants to purchase shares of series seed preferred stock becoming warrants to purchase shares of common stock as if the proposed IPO had occurred on the later of April 1, 2017 or the issuance date of the preferred stock and the warrants to purchase shares of series seed preferred stock.

Unaudited pro forma basic and diluted net loss per share attributable to common stockholders was calculated as follows:

	Year ended March 31, 2018
Numerator:	
Net loss attributable to common stockholders	$ (19,702)
Change in fair value of warrant liability	972
Pro forma net loss attributable to common stockholders	$ (18,730)
Denominator:	
Weighted average common shares outstanding, basic and diluted	4,978,539
Pro forma adjustment to reflect assumed conversion of preferred stock to common stock upon the completion of the proposed initial public offering	16,528,159
Pro forma weighted average common shares outstanding, basic and diluted	21,506,697
Pro forma net loss per share attributable to common stockholders, basic and diluted	$ (0.87)

13. Commitments and contingencies

Lease agreements

In December 2015, the Company entered into a lease agreement for office space in Woburn, Massachusetts, which expires on March 30, 2021. The Company has the option to extend the lease agreement for successive periods of five years. Monthly lease payments, inclusive of base rent and ancillary charges, total $7. Monthly base rent is subject to increase each year in proportion to the Consumer Price Index.

In April 2016, the Company entered into a lease agreement for office and laboratory space in Abingdon, England, which expires on April 3, 2026. The Company has the right to terminate the lease as of April 4, 2021 upon at least nine months' prior written notice. Monthly lease payments are inclusive of base rent, ancillary charges, non-rent shared tenant occupancy costs and the respective value added tax to be paid. Monthly lease payments include base rent of approximately $23 through December 3, 2016 and $31 thereafter. Monthly base rent is subject to increase after April 2021 in proportion to the Retail Price Index.

In April 2016, the Company subleased a portion of the leased premises for monthly base rent of approximately $23. The Company recognized $205 and $0 under the sublease as a reduction to rent expense recorded within research and development expenses in the consolidated statements of operations during the years ended March 31, 2017 and 2018, respectively.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

The Company recorded rent expense of $282 and $430 during the years ended March 31, 2017 and 2018, respectively.

The following table summarizes the future minimum lease payments due under the Company's operating leases as of March 31, 2018:

2019	$	431
2020		431
2021		431
	$	1,293

Manufacturing commitments

The Company has entered into an agreement with a contract manufacturing organization to provide clinical trial products. As of March 31, 2017 and 2018, the Company had committed to minimum payments under these arrangements totaling $2,004 and $2,938, respectively, through March 31, 2019.

Indemnification agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to vendors, lessors, business partners and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with members of its board of directors that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in many cases, unlimited. To date, the Company has not incurred any material costs as a result of such indemnifications. The Company is not aware of any claims under indemnification arrangements, and therefore it has not accrued any liabilities related to such obligations in its consolidated financial statements as of March 31, 2017 or 2018.

Legal proceedings

The Company is not a party to any litigation and does not have contingency reserves established for any litigation liabilities.

Agreement with Bristol-Myers Squibb Company

In February 2018, the Company entered into an agreement with Bristol-Myers Squibb Company ("BMS"). Pursuant to the agreement, BMS will provide to the Company, at no cost, a compound for use in the Company's ongoing clinical trial. Under the agreement, the Company will sponsor, fund and conduct the clinical trial in accordance with an agreed-upon protocol. BMS granted the Company a non-exclusive, non-transferrable, royalty-free license (with a right to sublicense) under its intellectual property to its compound in the clinical trial and agreed to manufacture and supply its compound, at its cost and for no charge to the Company, for use in the clinical trial. Both parties will own the study data produced in the

(Amounts in thousands, except share and per share amounts)

clinical trial, other than study data related solely to BMS's compound, which will belong solely to BMS, or study data related solely to the Company's compound, which will belong solely to the Company.

Unless earlier terminated, the agreement will remain in effect until (i) the completion of the clinical trial, (ii) all related clinical trial data have been delivered to both parties and (iii) the completion of any statistical analyses and bioanalyses contemplated by the clinical trial protocol or any analysis otherwise agreed upon by the parties. The agreement may be terminated by either party (i) in the event of an uncured material breach by the other party, (ii) in the event the other party is insolvent or in bankruptcy proceedings or (iii) for safety reasons. Upon termination, the licenses granted to the Company to use BMS's compound in the clinical trial will terminate.

14. Benefit plans

The Company established a defined-contribution savings plan under Section 401(k) of the Code (the "401(k) Plan"). The 401(k) Plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. Matching contributions to the 401(k) Plan may be made at the discretion of the Company's board of directors. During the years ended March 31, 2017 and 2018, the Company made contributions totaling $8 and $49, respectively, to the 401(k) Plan.

We provide a pension contribution plan for our employees in the United Kingdom, pursuant to which we match our employees' contributions each year in amounts up to 8% of their annual base salary.

15. Geographic information

The Company operates in two geographic regions: the United States (Massachusetts) and the United Kingdom (Oxfordshire). Information about the Company's long-lived assets held in different geographic regions is presented in the tables below:

	March 31,	
	2017	2018
United States	$ 30	$ 20
United Kingdom	312	350
	$ 342	$ 370

16. Subsequent events

For its consolidated financial statements as of March 31, 2018 and for the year then ended, the Company evaluated subsequent events through June 11, 2018, the date on which those financial statements were issued.

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

(Amounts in thousands, except share and per share amounts)

Agreement with Regeneron Pharmaceuticals, Inc.

In May 2018, the Company entered into an agreement with Regeneron Pharmaceuticals, Inc., ("Regeneron"). The Company and Regeneron are each independently developing compounds for the treatment of certain tumor types. Pursuant to the agreement, the Company and Regeneron will undertake one or more clinical trials using a combination of the compounds being developed by each entity. Under the agreement, each study will be conducted under terms set out in a separately agreed upon study plan that will identify the name of the sponsor and which party will manage the particular clinical trial, and include the protocol, the budget and a schedule of clinical obligations. The Company and Regeneron have not yet agreed to any study plan.

Pursuant to the terms of the agreement, each party granted the other party a non-exclusive license under its respective intellectual property and agreed to contribute the necessary resources needed to fulfill its respective obligations, in each case, under the terms of the to-be agreed upon study plans. Development costs of a particular clinical trial will be split equally between the Company and Regeneron.

The agreement may be terminated by either party if (i) there is no active study plan for which a final study report has not been completed, (ii) the parties have not entered into a study plan for an additional clinical trial within a period of time after the delivery of the most recent final study report or (iii) in the event of a material breach.

Events assessed for recognition subsequent to the original issuance of the consolidated financial statements

Forward stock split

On July 9, 2018, the Company effected a 1-for-9.94688 forward stock split of its issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratios for each series of the Company's Preferred Stock (see Note 7). Accordingly, all share and per share amounts for all periods presented in the accompanying consolidated financial statements and notes thereto have been adjusted retroactively, where applicable, to reflect this forward stock split and adjustment of the preferred stock conversion ratios. Further, on July 9, 2018, the Company's authorized shares of common stock were increased to 27,314,288. Accordingly, the authorized shares of common stock presented in the accompanying consolidated financial statements and notes thereto have been adjusted retroactively, where applicable, to reflect the newly authorized shares of common stock.

Events assessed for disclosure subsequent to the original issuance of the consolidated financial statements (unaudited)

Lease agreement

In June 2018, the Company entered into an agreement to lease approximately 63,000 square feet of office, manufacturing and laboratory space within a previously occupied building with approximately 106,000 square feet of rentable space in Framingham, Massachusetts. Pursuant to the lease agreement, the lease term is estimated to commence in November 2018, subject to the landlord completing certain agreed upon landlord improvements. The rent commencement date is estimated to be eight months after the commencement of the lease term. The initial lease term is ten years from the rent commencement

Replimune Group, Inc.

Notes to consolidated financial statements (Continued)

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date and includes two optional five year extensions. Annual lease payments during the first year are $2,373 with increases of 3.0% each year.

Study plan for agreement with Regeneron

In June 2018, under the terms of the agreement between the Company and Regeneron, the parties agreed to the first study plan. The Company and Regeneron have agreed to the protocol, budget, sample testing and clinical obligations schedule under the study plan. Development and supply costs associated with the study plan will be split equally between the Company and Regeneron.

2018 Omnibus Incentive Compensation Plan

On July 9, 2018, the Company's board of directors adopted and the Company's stockholders approved the 2018 Omnibus Incentive Compensation Plan (the "2018 Plan"), which will become effective immediately prior to the effectiveness of the registration statement for the Company's initial public offering. The 2018 Plan provides for the issuance of incentive stock options, non-qualified stock options, stock awards, stock units, stock appreciation rights and other stock-based awards. The number of shares initially reserved for issuance under the 2018 Plan is 3,617,968 shares, which is equal to the sum of (i) 3,486,118 shares of the Company's common stock, plus (ii) the number of shares of the Company's common stock reserved for issuance under the 2017 Plan that remain available as of the effective date of the 2018 Plan (not to exceed 131,850 shares of the Company's common stock). If any options or stock appreciation rights, including outstanding options and stock appreciation rights granted under the 2017 Plan (up to 2,520,247 shares), terminate, expire, or are canceled, forfeited, exchanged, or surrendered without having been exercised, or if any stock awards, stock units or other stock-based awards, including outstanding awards granted under the 2017 Plan, are forfeited, terminated, or otherwise not paid in full in shares of common stock, the shares of the Company's common stock subject to such grants will be available for purposes of our 2018 Plan.

Employee Stock Purchase Plan

On July 9, 2018, the Company's board of directors adopted and the Company's stockholders approved the Employee Stock Purchase Plan (the "ESPP"), which will become effective immediately prior to the effectiveness of the registration statement for the Company's initial public offering. The total shares of common stock initially reserved for issuance under the ESPP will be limited to 348,612 shares. In addition, as of the first trading day of each fiscal year during the term of the ESPP (excluding any extensions), an additional number of shares of the Company's common stock equal to 1% of the total number of shares outstanding on the last trading day in the immediately preceding fiscal year or 697,224 shares, whichever is less (or such lesser amount as determined by the Company's board of directors) will be added to the number of shares authorized under the ESPP. If the total number of shares of common stock to be purchased pursuant to outstanding purchase rights on any particular date exceed the number of shares then available for issuance under the ESPP, then the plan administrator will allocate the available shares pro-rata and refund any excess payroll deductions or other contributions to participants.

6,700,000 shares

Replimune Group, Inc.

Common stock

July 19, 2018

J.P. Morgan **Leerink Partners** **BMO Capital Markets**

Until August 13, 2018 (25 days after the date of this prospectus), all dealers that effect buy, sell or trade shares of our Common Stock, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriter and with respect to their unsold allotments or subscriptions.