

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549**

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2016

OR

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

For the transition period from _____ to _____

Commission File Number: 001-36508

KITE PHARMA, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

27-1524986

(IRS Employer Identification No.)

**2225 Colorado Avenue
Santa Monica, California**

(Address of Principal Executive Offices)

90404

(Zip Code)

(310) 824-9999

**(Registrant's Telephone Number, Including Area Code)
Securities registered pursuant to Section 12(b) of the Act:**

Title of each class

Name of each exchange on which registered

Common Stock, par value \$0.001 per share

The NASDAQ Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. **Yes** **No**

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. **Yes** **No**

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). **Yes** **No**

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. **x**

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

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant based on the closing price of the registrant's common stock as reported on The NASDAQ Global Select Market on June 30, 2016, the last business day of the registrant's most recently completed second quarter, was approximately \$2,175 million.

As of February 24, 2017, there were 50,190,134 shares of the registrant's common stock, par value \$0.001 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to its 2017 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Such Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, or this Annual Report, may contain “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are subject to the “safe harbor” created by those sections. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth below under Part I, Item 1A, “Risk Factors” in this Annual Report.

We may, in some cases, use words such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes to identify these forward-looking statements. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements and are based upon our current expectations, beliefs, estimates and projections, and various assumptions, many of which, by their nature, are inherently uncertain and beyond our control. Forward-looking statements in this Annual Report include, but are not limited to, statements about:

- our timing and ability to obtain and maintain regulatory approval of KTE-C19, and any related restrictions, limitations and/or warnings in the label of KTE-C19;
- our ability to commercialize KTE-C19, if approved;
- our plans and ability to research, develop and commercialize our other product candidates, including under our research collaboration with Amgen Inc.;
- the success, cost and timing of our product development activities and clinical trials;
- the ability and willingness of the National Cancer Institute, or the NCI, to continue research and development activities relating to our engineered autologous cell therapy, pursuant to the Cooperative Research and Development Agreements, or CRADAs, with the U.S. Department of Health and Human Services, as represented by the NCI;
- the ability to comply with our existing research, license, joint venture and other collaboration agreements, and the ability of our partners to develop and commercialize our product candidates in other territories;
- our ability to obtain funding for our operations, including funding necessary to complete further development and commercialization of our product candidates;
- our ability to attract collaborators with development, regulatory and commercialization expertise;
- our ability to integrate T-Cell Factory B.V., or TCF, a Dutch company we acquired in March 2015, and our ability to potentially significantly expand our pipeline of TCR-based product candidates using TCF’s proprietary TCR-GENErator technology platform;
- future agreements with third parties in connection with the commercialization of our product candidates and any other approved product;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- the rate and degree of market acceptance of our product candidates;
- regulatory developments in the United States and foreign countries;
- our ability to utilize our own clinical manufacturing facility and commercial manufacturing facility;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to in-license, acquire, or invest in complementary businesses, technologies, products or assets to further expand or complement our portfolio of product candidates;
- our use of cash and other resources; and

- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidates.

We caution you that the risks, uncertainties and other factors referenced above may not contain all of the risks, uncertainties and other factors that are important to you. In addition, we cannot guarantee future results, level of activity, performance or achievements. Any forward-looking statement made by us in this Annual Report speaks only as of the date of this Annual Report or as of the date on which it is made. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this Annual Report.

Trademarks and Trade names

We have common law, unregistered trademarks for Kite Pharma based on use of the trademarks in the United States. This Annual Report contains references to our trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this Annual Report, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

PART I

Item 1. Business

Overview

We are a clinical-stage biopharmaceutical company focused on the development and commercialization of novel cancer immunotherapy products designed to harness the power of a patient's own immune system to target and kill cancer cells. We do this using our engineered autologous cell therapy, which we believe is a transformational approach to the treatment of cancer. Our therapy involves modifying a patient's T cells outside the patient's body, or *ex vivo*, causing the T cells to express chimeric antigen receptors, or CARs, or T cell receptors, or TCRs, and then reinfusing the engineered T cells back into the patient. CARs can recognize native cancer antigens that are part of an intact protein presented on the cancer cell surface. TCRs broaden the therapeutic approach by recognizing fragments on the cancer cell surface derived from intracellular proteins. By combining both CAR and TCR approaches, we have generated and advanced a broad portfolio of product candidates to target both solid and hematological tumors.

Our lead product candidate, KTE-C19, is a CAR-based therapy that targets the CD19 antigen, a protein expressed on the cell surface of B-cell lymphomas and leukemias. Since the second half of 2015, we have been conducting a registrational Phase 2 clinical trial (ZUMA-1) of KTE-C19 in patients with relapsed or refractory aggressive diffuse large B cell lymphoma, or DLBCL, primary mediastinal B cell lymphoma, or PMBCL, or transformed follicular lymphoma, or TFL. DLBCL, PMBCL and TFL are types of aggressive non-Hodgkin lymphoma, or NHL. We recently announced results from the primary analysis of this clinical trial. As further described below under "Recent Developments," KTE-C19 met the primary endpoint of objective response rate, or ORR, $p < 0.0001$, with an ORR of 82%.

Based on the results from the primary analysis of ZUMA-1, we plan to submit a Biologics License Application, or BLA, in the first quarter of 2017 to the U.S. Food and Drug Administration, or FDA, for the accelerated approval of KTE-C19 as a treatment for patients with relapsed or refractory aggressive NHL, who are ineligible for autologous stem cell transplant, or ASCT. We plan to commercially launch KTE-C19 in 2017, if approved. The United States Adopted Name, or USAN, for KTE-C19 is axicabtagene ciloleucel.

We are conducting other clinical studies of KTE-C19 for additional hematological indications. We are also advancing other CAR- and TCR-based product candidates, including KITE-718, a TCR-based therapy targeting a MAGE A3/A6 antigen for the treatment of MAGE A3/A6 positive cancers including non-small cell lung cancer, or NSCLC, and bladder cancer. We filed an investigational new drug application, or IND, to initiate a Phase 1 clinical trial of KITE-718 at the end of 2016 and plan to open the clinical trial for patient enrollment in the first half of 2017.

Our Pipeline

Our clinical trials and those being conducted with our collaborators, the National Cancer Institute, or NCI, and Amgen Inc., or Amgen, are summarized below. Other than for KTE-C19 and KITE-718, the NCI filed INDs with the FDA in order to conduct ongoing clinical trials of CAR- and TCR-based product candidates. As a result, we will have to submit separate INDs to conduct our own clinical trials relating to the product candidates in clinical trials at the NCI.

| | | TRIAL | AREA OF RESEARCH | PRE-IND | PHASE 1 | PHASE 2/3 |
|---------------------------|---|--------------------------------------|--|---------|---------|-----------|
| Chimeric Antigen Receptor | axicabtagene ciloleucel | ZUMA 1 | DLBCL, PMBCL & TFL | | | |
| | KTE-C19 (WAVE-1) | ZUMA 2 ZUMA 3 & 4 | MCL Adult & Pediatric ALL | | | |
| | KTE-C19 (WAVE-2) | ZUMA-5 ZUMA-6 ZUMA-7 ZUMA-8 | Indolent NHL DLBCL (PD-L1 mAb) DLBCL (2nd line) CLL | | | |
| | Human anti-CD19 (2 nd Gen) | NCI | Heme Malignancies | | | |
| | Humanized anti-CD19 Control CAR (3 rd Gen) | | Heme Malignancies | | | |
| | KITE-585 (anti-BCMA) | | MM | | | |
| | KITE-796 (anti-CLL-1 Control CAR) | | AML | | | |
| | | | | | | |
| T Cell Receptor | MAGE A3/A6 | NCI | Solid Tumor | | | |
| | KITE-718 (MAGE A3/A6) | | Solid Tumor | | | |
| | MAGE A3 | NCI | Solid Tumor | | | |
| | HPV-16 E6 & E7 | NCI | Cervical and HNC | | | |
| | KITE-439 (HPV-16 E7) | | Cervical and HNC | | | |
| | KRAS | NCI | Solid Tumor | | | |
| | SSX-2 | NCI | Solid Tumor | | | |
| | Neoantigens | NCI | Solid Tumor | | | |

Recent Developments

ZUMA-1 Primary Analysis of KTE-C19

On February 28, 2017, we announced positive data from the primary analysis of ZUMA-1. The study met the primary endpoint of ORR, p<0.0001, with an ORR of 82% recorded after a single infusion of KTE-C19.

ZUMA-1 Phase 2 enrolled patients with chemorefractory aggressive NHL into two cohorts. The first cohort included patients with DLBCL, and the second cohort enrolled patients with TFL and PMBCL. The primary analysis was planned to include 72 patients with DLBCL from the first cohort and 20 patients with PMBCL or TFL from the second cohort with at least six months of follow-up. Since an additional nine patients were enrolled but not dosed with KTE-C19 at the time the 92nd patient was treated, these additional patients were treated in ZUMA-1 and included in safety and efficacy results. The table below summarizes the response rates, ORR and rate of complete response, or CR, from the 101 treated patients.

| | DLBCL (n=77) | | TFL/PMBCL (n=24) | | Combined (n=101) | |
|---------|--------------|--------|------------------|--------|------------------|--------|
| | ORR (%) | CR (%) | ORR (%) | CR (%) | ORR (%) | CR (%) |
| ORR | 82 | 49 | 83 | 71 | 82 | 54 |
| Month 6 | 36 | 31 | 54 | 50 | 41 | 36 |

At month 6, five of the 101 patients continued to experience highly significant and durable partial responses, or PRs, with minimal abnormalities in positron emission tomography, or PET, scans. One of these PRs converted to a CR at month 9.

Four of the 101 patients in ongoing CR did not have a month 6 tumor assessment prior to the data cut-off and are therefore categorized as non-responders for month 6 in the table above. These patients have an opportunity to be counted as a month 6 CR in a follow-up analysis, which may increase the month 6 response and month 6 CR rate.

With a median follow-up of 8.7 months for this primary analysis, the median overall survival has not yet been reached. Findings from SCHOLAR-1 (Retrospective Non-Hodgkin Lymphoma Research), showed that in a similar patient population, median overall survival was 6.6 months.

The most common grade 3 or higher adverse events included anemia (43%), neutropenia (39%), decreased neutrophil count (32%), febrile neutropenia (31%), decreased white blood cell count (29%), thrombocytopenia (24%), encephalopathy (21%) and decreased lymphocyte count (20%). As compared to the interim analysis, grade 3 or higher cytokine release syndrome, or CRS, decreased from 18% to 13% and neurologic events decreased from 34% to 28%. There were no cases of cerebral edema.



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As previously reported at the American Society of Hematology, or ASH, Annual Meeting in 2016, there were three deaths not due to disease progression in the study. Two events, one hemophagocytic lymphohistiocytosis and one cardiac arrest in the setting of CRS, were deemed related to KTE-C19. The third case, a pulmonary embolism, was deemed unrelated. Between the interim analysis that included 62 patients, and this primary analysis which now includes all 101 patients, there were no additional deaths due to adverse events.

2017 American Society of Blood and Marrow Transplantation Meeting

On February 26, 2017, Dr. James N. Kochenderfer, M.D., an investigator in the Experimental Transplantation and Immunology Branch of the NCI Center for Cancer Research, presented results from two NCI clinical trials funded pursuant to our CRADAs at the 2017 American Society of Blood and Marrow Transplantation Meeting.

The first study involved 22 patients with relapsed/refractory NHL who received a single dose of anti-CD19 CAR T cell therapy after a low-dose, optimized chemotherapy conditioning regimen of cyclophosphamide and fludarabine. Objective responses were seen in 73% of patients, and CRs were observed in 55% of patients. Overall, duration of response ranged from seven months to 24+ months, and 11 of the 12 CRs were ongoing. Reversible grade 3 or 4 neurologic events, including confusion, dysphasia, encephalopathy, and gait disturbances, were observed in 55% of treated patients.

In the second study, of a fully-human anti-CD19 CAR T cell, 12 patients with relapsed/refractory NHL received low-dose chemotherapy followed by administration of the engineered CAR T cells. Repeat doses of CAR T cells were administered to patients who achieved stable disease or partial response to the first infusion. Objective responses were seen in 75% of patients, and CRs were observed in 50% of patients. Duration of CRs ranged from two to 8+ months. Reversible grade 3 adverse events included CRS and were observed in 25% of patients, and one of 12 patients experienced grade 3 or 4 neurologic events.

Strategic Partnerships in China and Japan

On January 10, 2017, KP EU C.V., our wholly owned indirect subsidiary, entered into a cooperative joint venture agreement with Shanghai Fosun Pharmaceutical Industrial Development Co., Ltd., or Fosun Pharma, pursuant to which the parties will establish a joint venture for the purpose of developing, manufacturing and commercializing KTE-C19 in the mainland of the People's Republic of China, the Hong Kong Special Administration Region and the Macau Special Administration Region.

On January 5, 2017, Kite Pharma EU B.V., our wholly owned indirect subsidiary, entered into a collaboration and license agreement with Daiichi Sankyo Company, Limited, or Daiichi Sankyo, pursuant to which we have granted to Daiichi Sankyo an exclusive license to develop and commercialize KTE-C19 in Japan. Pursuant to the agreement, we received a \$50.0 million upfront payment from Daiichi Sankyo in January 2017.

For additional details on the Fosun Pharma and Daiichi Sankyo agreements, see Note 13 to our financial statements appearing elsewhere in this Annual Report.

Our Strategy

Our goal is to be the leader in immuno-oncology across multiple therapeutic indications. To achieve this, we plan to commercialize our lead product candidate, KTE-C19, if approved, by the end of 2017 and continue to advance a pipeline of CAR- and TCR-based product candidates for the treatment of advanced solid and hematological malignancies. Key elements of our strategy are to:

Complete the BLA submission and prepare for potential commercial launch of KTE-C19.

We initiated a rolling submission of our BLA in December 2016 and expect to complete the submission in the first quarter of 2017 seeking accelerated approval of KTE-C19 as a treatment for patients with relapsed or refractory aggressive NHL, who are ineligible for ASCT. At the time of submission, we will request priority review of the BLA. After a 60-day filing review period, if accepted for FDA review, the FDA's priority review goal of six months for reviewing and responding to the BLA would begin. If approved, we expect to commercially launch KTE-C19 in 2017.

We have a comprehensive commercial strategy that focuses on commercial operations, marketing and account management, and access. With respect to operations, we have established a manufacturing facility in El Segundo, which is adjacent to Los Angeles International Airport, that we expect will commercially manufacture KTE-C19. In addition, we are developing our Kite Konnect technology platform to enable

commercial-scale logistics for KTE-C19. Kite Konnect, in combination with other IT solutions, will track orders electronically from patient enrollment to the collection of the patient's cells to infusion of KTE-C19.

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Kite Konnect will also provide a user-friendly interface and information platform for both healthcare providers prescribing KTE-C19 and for patients receiving KTE-C19.

Our marketing and account management strategy is designed to leverage the top-tier hospitals that have experience with autologous T cell therapies and that treat the largest number of patients with aggressive NHL. We plan to target our educational and commercial outreach to more than 70 key transplant and lymphoma centers over a 12-month period post-launch, which we believe has the potential to reach almost 90% of patients with DLBCL who are ineligible for ASCT. Most of these centers have experience with autologous T cell therapies, and include approximately 40 of our KTE-C19 clinical trial sites.

Our access strategy is designed to ensure that physicians and patients can access KTE-C19 and have a positive personalized experience. We anticipate patients will be covered by both commercial and government payors. Our access team has initiated meetings with national and regional payors to discuss KTE-C19 and the required steps for coverage.

Maximize KTE-C19 clinical development and advance KTE-C19 outside the United States.

We are currently conducting five company-sponsored trials of KTE-C19. We opened a third cohort in ZUMA-1 to allow us to evaluate prophylactic treatment of adverse events, broaden the patient population to include relapsed, transplant-ineligible subjects, and to expand the clinical trial to Europe. We are also conducting a Phase 2 clinical trial (ZUMA-2) of KTE-C19 in patients with relapsed/refractory mantle cell lymphoma, or MCL, a Phase 1-2 clinical trial (ZUMA-3) of KTE-C19 in adult patients with relapsed/refractory acute lymphoblastic leukemia, or ALL, and a Phase 1-2 clinical trial (ZUMA-4) of KTE-C19 in pediatric patients with relapsed/refractory ALL. In the third quarter of 2016, we initiated a multi-center Phase 1b/2 clinical trial (ZUMA-6) of KTE-C19 in combination with Genentech's atezolizumab in patients with refractory DLBCL.

We expect to report primary data from ZUMA-2 and the Phase 2 portions of ZUMA-3 and ZUMA-4 in 2018. If we believe the data are compelling, we plan to pursue FDA approval for these additional indications. We plan to initiate clinical trials of KTE-C19 for the treatment of indolent NHL, or iNHL, and second line DLBCL, and chronic lymphocytic leukemia, or CLL, in 2017. In addition, we are planning to open an expanded access protocol in the first half of 2017 to provide KTE-C19 to appropriate patients with relapsed or refractory aggressive NHL, who are ineligible for ASCT.

We are also focused on bringing KTE-C19 to additional markets around the world. We plan to submit a marketing authorization application, or MAA, for KTE-C19 with the European Medicines Agency, or EMA, for the treatment of relapsed or refractory DLBCL, PMBCL and TFL in the second half of 2017. We partnered with Daiichi Sankyo and Fosun Pharma to develop and commercialize KTE-C19 in Japan and China, respectively, and may selectively partner with other third parties to develop and commercialize KTE-C19 in additional countries.

Progress multiple CAR- and TCR-based product candidates to target hematological and solid tumors in the near-term.

In addition to KTE-C19, we continue to advance other CAR-based product candidates. We plan to file an IND for KITE-585 targeting B cell maturation antigen, or BCMA, for the treatment of multiple myeloma in 2017 and for KITE-796 targeting C-type lectin-like molecule-1, or CLL-1, for the treatment of acute myeloid leukemia, or AML, in 2018. KITE-796 is a Kite product candidate being developed under our collaboration with Amgen, and we expect to incorporate molecular "on/off switch" technology into KITE-796 that we licensed from Cell Design Labs, Inc., or CDL. We believe the switch technology may provide dynamic control and precise regulation of KITE-796 after therapeutic administration and we refer to CAR-product candidates using this technology as Control CARs.

We are also progressing multiple TCR-based product candidates. We expect our Phase 1 clinical trial of KITE-718 for the treatment of MAGE A3/A6 positive cancers including NSCLC and bladder cancer to be open in the first half of 2017. In 2018, we plan to file an IND for KITE-439 targeting human papillomavirus, or HPV, type 16 E7 for the treatment of HPV-16 E7-positive cancers including cervical cancer and head and neck cancer.

Continue to leverage our collaborations to selectively identify and advance additional product candidates and technologies.

We plan to advance multiple additional CAR- and TCR-based product candidates under our collaborations, including with the NCI, Amgen, bluebird bio, Inc., Alpine Immune Sciences, Inc., or AIS, the Netherlands Cancer Institute, or NKI, and Leiden University Medical Center. In particular, we have three Cooperative

Research and Development Agreements, or CRADAs, with the U.S. Department of Health and Human Services, as represented by the NCI, through which we are funding the research and development of CAR- and TCR-based product candidates.

These NCI collaborations provide us the opportunity to license and advance products for oncology development based on human proof-of-concept data rather than preclinical animal data alone. Additionally, using its proprietary TCR-GENErator technology platform, we believe our European subsidiary, Kite Pharma EU B.V., can systematically discover tumor-specific TCRs.

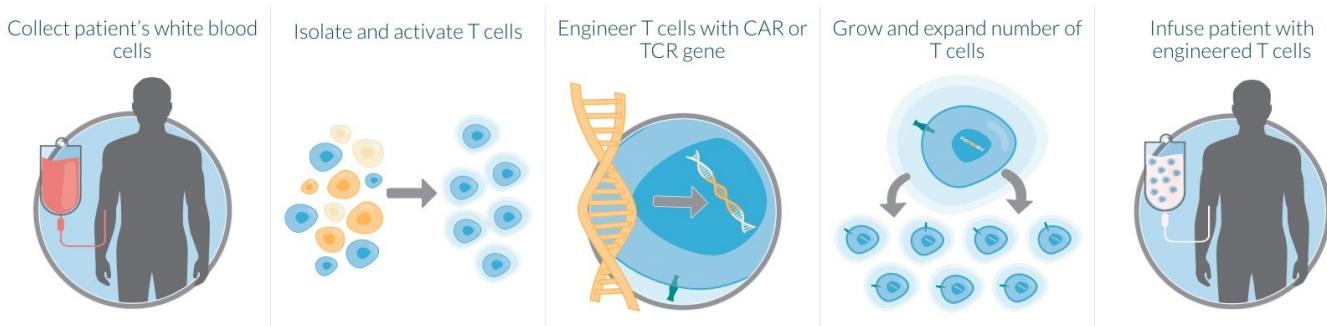
We also plan to continue our research of off-the-shelf allogeneic engineered T cell therapies. Pursuant to a license agreement with The Regents of the University of California, we have an exclusive, worldwide license to certain intellectual property related to an artificial thymic organoid system, which we believe will support T cell generation from non-renewable and renewable cell sources, including induced pluripotent stem cells or embryonic stem cells, and enable the research and development of allogeneic engineered T cell therapies.

We may in-license, acquire, or invest in complementary businesses, technologies, products or assets to further expand or complement our portfolio of CAR- and TCR-based product candidates.

Engineered Autologous Cell Therapy

White blood cells are a component of the immune system and are responsible for defending the body against infectious pathogens and other foreign material. There are several types of white blood cells, including T cells, natural killer cells, and B cells. T cells can be distinguished from other white blood cells by T cell receptors present on their cell surface. These receptors contribute to tumor surveillance by helping T cells recognize cancerous cells. The T cell has the ability to kill the cancerous cell once it is identified. When the T cells with cancer-specific receptors are absent, present in low numbers, of poor quality or rendered inactive by suppressive mechanisms employed by tumor tissue, cancer may grow and spread to various organs. In addition, standard of care treatments can be deleterious to T cells' ability to kill cancer. We believe our therapy has the potential to treat cancer by overcoming the limits of a person's immunosurveillance by increasing the effectiveness and number of a patient's cancer-specific T cells.

Our therapy involves engineering T cells to express cancer-specific receptors as illustrated below.



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The T cell engineering process that we have developed takes approximately 14 to 16 days from receipt of the patient's white blood cells at our manufacturing facility to release for delivery to the site for infusion of the engineered T cells back to the patient. We provide our therapy to patients in our clinical trials after they receive a short chemotherapy conditioning regimen, which is intended to improve the survival and proliferative capacity of the newly infused T cells.

Using our technology, T cells can be genetically modified to express one of two classes of cancer-specific receptors: CARs or TCRs. CARs recognize native cancer antigens that are part of an intact protein on the cancer cell surface. TCRs broaden the therapeutic approach by targeting cancer proteins that reside inside the cancer cells. In ordinary cell metabolism, intracellular proteins are degraded into fragments called peptides. These peptides are then "displayed" on the cell membrane by a "presenting" molecule called major histocompatibility complex, or MHC. While T cells may not be able to recognize cancer-specific proteins inside a cancer cell, T cells that are engineered with tumor-specific TCRs are able to recognize a specific peptide from an intracellular protein when it is displayed on the cancer cell surface.

T cells engineered with CARs or TCRs can proliferate inside a patient and have the potential to infiltrate the microenvironment of a solid cancer mass, killing large numbers of cancer cells. Furthermore, we believe T cells engineered with CARs or TCRs can potentially overcome several mechanisms of tumor escape to which endogenous T cells may be susceptible.

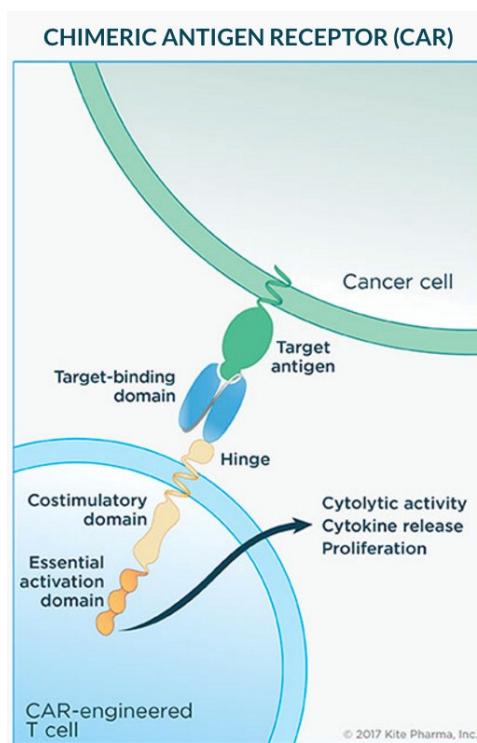
Upon binding with a target cell and activation, the engineered T cells release cytokines, which contribute to the killing of cancer cells. However, excessive cytokine release can result in a systemic inflammatory reaction consisting of fever and low blood pressure.

CARs and TCRs are discussed in more detail below.

CARs

Engineering T cells with a CAR involves using a viral vector as a delivery vehicle containing a CAR sequence to transduce, or integrate, the construct into the T cell's chromosome. The CAR sequence encodes the single-chain CAR protein. Our KTE-C19 CAR is comprised of the following elements:

- *Target Binding Domain:* At one end of the CAR is a target binding domain of an antibody that is specific to the target CD19 antigen on the cancer cell surface. This domain extends out of the engineered T cell into the extracellular space, where it can recognize target antigens. The target binding domain consists of a single-chain variable fragment, or scFv, of an antibody comprising variable domains of heavy and light chains joined by a short linker. This allows the expression of the CAR as a single-chain protein.
- *Transmembrane Domain and Hinge:* This middle portion of the CAR links the scFv target binding domain to the activating elements inside the cell. This transmembrane domain "anchors" the CAR in the cell's membrane. In addition, the transmembrane domain may also interact with other transmembrane proteins that enhance CAR function. In the extracellular region of the CAR, directly adjacent to the transmembrane domain, lies a "hinge" domain. This region of the CAR provides structural flexibility to facilitate optimal binding of the CAR's scFv target binding domain with the target antigen on the cancer cell's surface.
- *Activating Domains:* Located within the T cell's interior are two regions of the CAR responsible for activating the T cell upon binding to the target cell. The CD3 ζ element delivers an essential primary signal within the T cell, and the CD28 element delivers an additional, co-stimulatory signal. Together, these signals trigger T cell activation, resulting in proliferation of the CAR T cells and direct killing of the cancer cell. In addition, T cell activation stimulates the local secretion of cytokines and other molecules that can recruit and activate additional anti-tumor immune cells.

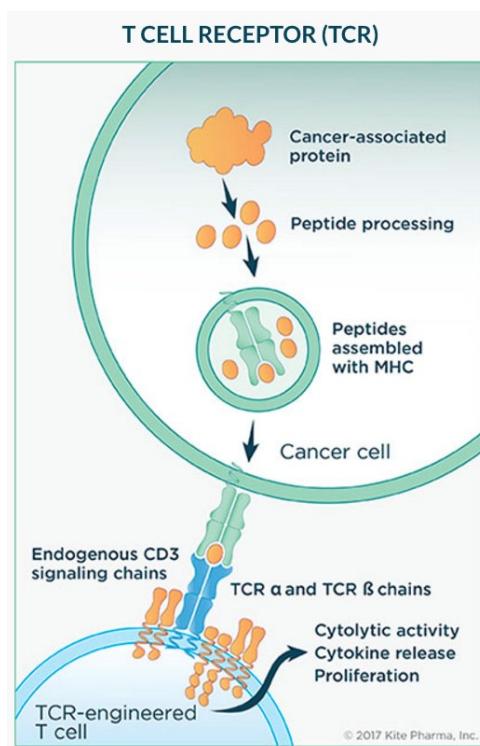


TCRs

Engineering T cells with a tumor-specific TCR involves using a viral vector containing TCR sequences to transduce the construct into the T cell's chromosome. The TCR sequences encode two protein chains, which are designed to bind with specific peptides presented by MHC on the surface of certain cancer cells.

The TCR protein chains are expressed on the T cell surface where they associate with CD3 proteins, which are natural components of the TCR complex. Upon binding of the TCR to the peptide-MHC complex on the cancer cell surface, the CD3 proteins deliver signals that trigger T cell activation, resulting in proliferation of the TCR-expressing T cells, killing of the cancer cell and stimulation of cytokine production and other molecules that can recruit and activate additional anti-tumor immune cells.

TCR technology primarily targets cancer antigens that fall into the following main categories: self-antigens, viral antigens and neo-antigens, also known as cancer-specific antigens. Self-antigens are generally shared across patients and include differentiation markers and cancer testis antigens, or CTAs. CTAs are expressed on a wide variety of common tumor types of various histological origins. We believe a subset of CTAs, primarily MAGE, as well as NY-ESO-1 and SSX2, are appropriate TCR targets because their expression on normal tissue is generally restricted to tissues that do not express MHC in adults. Viral antigens, such as those expressed by oncogenes, such as HPV-16-E6 and HPV-16-E7, are also shared across patients and are not expressed on normal tissue. As a result, T cells engineered to target cells with such CTAs or viral antigens would primarily target cancer cells rather than non-cancerous cells. We are initially focused on developing CTA-specific and virus oncoprotein-specific TCR-based product candidates. Under one of our CRADAs, we are also furthering with the NCI the research and development of the next generation of TCR-based product candidates to target neo-antigens such as KRAS, which are those derived from mutations arising in the tumor.



CAR and TCR Differences

There are three main differences between CARs and TCRs:

- **MHC Restriction:** Since TCRs recognize peptides only in the context of MHC molecules expressed on the surface of the target cell, their peptide specificity is termed MHC-restricted. In contrast, CAR target recognition is MHC-unrestricted. In humans, MHC molecules are known as human leukocyte antigen, or HLA, proteins. There are several HLA protein types which display genetic variation across the human population. As a result, a TCR-based product candidate would have to be matched to the HLA type of the patient.
- **Cancer Target Frequency:** CARs recognize native cancer antigens that are part of an intact protein on the cancer cell surface. Bioinformatic studies predict that 20% to 30% of all encoded proteins may be extracellular or membrane-associated. TCRs broaden the therapeutic approach by recognizing specific peptides derived from intracellular proteins that are displayed on the cancer cell surface in combination with MHC.

- *Antigen-Presenting Cell Recognition:* As opposed to CARs, TCRs have the potential to recognize cancer antigens not only presented directly on the surface of cancer cells but also presented by antigen-presenting cells in the tumor microenvironment and in secondary lymphoid organs. Antigen-presenting cells are native immune-system cells responsible for the amplification of the immune response.

Other Immunotherapies

Immuno-oncology is one of the most actively pursued areas of research by biotechnology and pharmaceutical companies today. Over the past few decades, several novel treatment methodologies have emerged that modulate the immune system including vaccines and monoclonal antibodies. Therapeutic vaccines have historically been associated with modest efficacy in the treatment of cancer. They commonly utilize dendritic cells, a type of immune cell that presents tumor antigens to T cells, which can result in T cell activation. Similarly, monoclonal antibodies, after binding a cancer antigen, classically utilize an effector arm in order to stimulate an immunological response.

More recently, interest and excitement has centered on the use of bispecific antibodies and checkpoint inhibitors. Bispecific antibodies commonly target both the cancer antigen and T cell receptor, thus bringing both cancer cells and T cells in close proximity to maximize the likelihood of an immune response to the cancer cells. Checkpoint inhibitors, or CPIs, work by releasing the body's natural "brakes" on the immune system. Tumors can evade immune surveillance by triggering co-inhibitory receptors that can blunt T cell effectiveness and proliferation. By targeting these receptors, CPIs release these brakes, thereby reactivating T cells. Both bispecific antibodies and CPIs require functioning T cell populations in order to exert their effect.

We believe our engineered autologous cell therapy presents a promising innovation in immunotherapy by focusing directly on the key immune mediator, the T cell. Our engineered T cells bind to cancer cells directly, and as such, have the potential to kill a substantial number of tumor cells. In addition, we believe that our engineered T cells may be synergistic with other forms of immunotherapy. As an example, engineered autologous cell therapy may potentially be used in combination with CPIs to enhance efficacy. We are conducting a Phase 1b/2 combination study of KTE-C19 and atezolizumab, Genentech's anti-PD-L1 monoclonal antibody. This is the first industry sponsored combination study of an anti-CD19 engineered CAR T cell and a CPI.

KTE-C19

Overview

We are initially advancing KTE-C19 for the treatment of refractory, aggressive NHL, including the subtypes DLBCL, PMBCL and TFL. NHL is a cancer of white blood cells, including B cells. CD19 is expressed on the surface of B cells, including malignant B cells, and it is not thought to be expressed on any other tissue. B cells are considered non-essential tissue, as they are not required for patient survival. We believe CD19 is an appropriate target for the treatment of all types of B cell leukemias and lymphomas.

Diffuse Large B Cell Lymphoma, Primary Mediastinal B cell Lymphoma and Transformed Follicular Lymphoma

According to the American Cancer Society, DLBCL is the most common subtype of NHL, accounting for approximately 30% of the total 70,000 NHL patients diagnosed each year in the United States. It is classified as an aggressive lymphoma, in which survival is measured in months rather than years.

First line therapy for patients with DLBCL usually consists of chemotherapy regimen known as R-CHOP (rituximab, cytoxan, adriamycin, vincristine and prednisone), which includes the use of a monoclonal antibody known as rituximab. Approximately 50% to 60% of DLBCL patients are cured with first line therapy.

For patients who relapse or are refractory to first line therapy, the current standard of care for second line therapy consists of a platinum-based chemotherapy regimen with rituximab. These second line chemotherapy regimens include R-ICE (rituximab, ifosfamide, carboplatin and etoposide) or R-DHAP (rituximab, dexamethasone, cytarabine and cisplatin).

Patients who respond to second line therapy may go on to receive hematopoietic stem cell transplantation, or HSCT. Patients who do not respond to second line therapy or relapse after HSCT are treated with a third line salvage chemotherapy. These patients have a poor prognosis and treatment is generally palliative with no curative treatment options.

Findings from SCHOLAR-1, a multi-institutional, patient-level pooled analysis of outcomes from 635 patients with refractory DLBCL, showed that patients with DLBCL who do not respond to their last treatment with a chemotherapy-based regimen or

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have relapsed less than 12 months after ASCT have consistently poor outcomes. Median overall survival was 6.6 months and the overall response rate across all 597 evaluable patients was 26% with only 8% achieving a CR.

FL is the second most common subtype of NHL and the most common type of iNHL. There are approximately 15,300 new diagnoses of FL in the United States each year. Conventional therapy for FL is not curative, and most patients develop progressive disease and chemo-resistance. A pivotal event in the history of some patients with FL is histological transformation to more aggressive malignancies, most commonly DLBCL.

Due to differences in clinicopathologic features and treatment regimens, PMBCL can be considered a different patient population to DLBCL. There are approximately 1,650 new cases of PMBCL in the United States each year. Patients can be generally classified as having either limited stage or advanced stage disease. Limited stage disease can be contained within one irradiation field. In contrast, advanced stage disease refers to disease that cannot be contained within one irradiation field, bulky disease (greater than 10 centimeter wide tumors), and tumors that have an associated pericardial or pleural effusion. Patients of advanced stage disease are typically treated with induction chemoimmunotherapy. Primary refractory disease occurs when initial therapy fails to achieve a complete response and the general approach is to administer systemic chemotherapy with or without rituximab with plans to proceed to high-dose chemotherapy and HSCT in those with chemotherapy-sensitive disease. The treatment of patients who are not candidates for HSCT, who fail to respond to second line chemotherapy regimens, or who relapse after HSCT is generally palliative. Salvage therapy is rarely curative.

Other Lymphomas and Leukemias

We also expect to seek regulatory approval of KTE-C19 for the treatment of other lymphomas and leukemias, including MCL, ALL and CLL.

There are approximately 4,200 new cases of MCL in the United States each year. Current standard of care treatments for MCL are not curative, and virtually all patients will have refractory or recurrent disease. Treatment of MCL is difficult due to the rapid development of resistance to standard of care treatments.

ALL is an aggressive form of leukemia with approximately 6,500 patients diagnosed with ALL in the United States each year. Approximately 90% of patients with ALL will demonstrate a complete remission with intensive induction chemotherapy. However, after consolidation and maintenance therapy, the majority of patients will relapse in the bone marrow. Although approximately half of patients with relapsed ALL will obtain a second complete remission, most will eventually die from leukemia. The prognosis of patients with relapsed or refractory ALL is poor, with median survival less than one year.

CLL is the most common leukemia, with approximately 14,600 new cases in the United States per year. It is characterized by a progressive accumulation of functionally incompetent lymphocytes which are monoclonal in origin. Most patients with CLL will have an initial complete or partial response to chemotherapy, but relapse invariably occurs after treatment discontinuation unless the patient undergoes allogeneic HSCT, which is the only known curative therapy. Almost all patients with CLL will develop progressive disease.

Development Strategy

ZUMA-1

Based on the results from our primary analysis of ZUMA-1, we expect to complete the submission of our BLA in the first quarter of 2017 for accelerated approval of KTE-C19 as a treatment for patients with relapsed or refractory aggressive NHL, who are ineligible for ASCT. The BLA submission will be based on the 101 patients treated in ZUMA-1 as described above under "Recent Developments-ZUMA-1 Primary Analysis of KTE-C19." During the course of the study, there were an additional ten patients enrolled but not treated, due to serious adverse events prior to treatment in seven patients, no measurable disease in two patients and product unavailability in one patient, which largely illustrates the disease severity of the ZUMA-1 patient population.

Upon submission, there is a 60-day filing review period by the FDA. During this period, the FDA could refuse to file our BLA if the FDA deems the application incomplete. If accepted for FDA review, the FDA's priority review goal of six months for reviewing and responding to the BLA would begin.

If approved, we plan to commercially launch KTE-C19 in 2017. The USAN for KTE-C19 is axicabtagene ciloleucel.

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Even if we receive FDA approval, we may be required to initiate a confirmatory study in NHL in order to fulfill likely post-marketing clinical study requirements to convert any accelerated approval to regular approval. We plan to initiate a clinical trial of KTE-C19 for the treatment of second line DLBCL in 2017 to fulfill the post-marketing clinical study requirement. The design of this study would be confirmed pending regulatory agency discussions.

We are planning to submit an MAA to the EMA for KTE-C19 for the treatment of relapsed or refractory DLBCL, PMBCL and TFL in the second half of 2017.

We opened a third cohort in ZUMA-1 to allow us to evaluate prophylactic treatment of adverse events, broaden the patient population to include relapsed, transplant-ineligible subjects, and to expand the clinical trial to Europe. In addition, we are planning to open an expanded access protocol in the first half of 2017 to provide KTE-C19 to appropriate patients with relapsed or refractory aggressive NHL, who are ineligible for ASCT.

ZUMA-2

We expect to enroll approximately 70 patients with relapsed/refractory MCL in ZUMA-2. The primary endpoint is ORR. We plan to report primary data from ZUMA-2 in 2018. If we believe the data are compelling, we plan to pursue marketing and regulatory approval for the MCL indication.

ZUMA-3 and ZUMA-4

We expect to enroll approximately 75 adult patients with relapsed/refractory ALL in ZUMA-3 and approximately 75 pediatric patients with relapsed/refractory ALL in ZUMA-4. As reported at the 2016 ASH Annual Meeting, nine out of 11 patients (82%) achieved complete remission or complete remission with incomplete or partial hematological recovery in a preliminary analysis of the Phase 1 ZUMA-3 and ZUMA-4 trials. In these patients, 100% of responders tested negative for minimal residual disease, which has been shown to correlate with risk of disease relapse in ALL. In the Phase 1 trials, 13 patients were treated with KTE-C19. Eleven patients were evaluable for response and two patients did not reach the evaluation time point at the data cutoff. Five of 13 (38%) patients had grade 3 or higher CRS and grade 3 or higher neurological events. One patient in ZUMA-3 died from KTE-C19 related CRS and one patient in ZUMA-4 died from a disseminated fungal infection unrelated to KTE-C19. All patients had very high disease burden with median bone marrow blasts equal to 70% in ZUMA-3 and 91% in ZUMA-4.

We plan to transition to the Phase 2 portions of both trials in 2017 and report data from the Phase 2 portions of ZUMA-3 and ZUMA-4 in 2018. If we believe the data are compelling, we plan to pursue marketing and regulatory approval for the adult ALL and pediatric ALL indications.

We plan to initiate a clinical trial of KTE-C19 for the treatment of iNHL in the first quarter of 2017 and of CLL later in 2017.

Additional CAR- and TCR-Based Product Candidates

CAR-Based Product Candidates

We are researching and developing additional CAR-based product candidates, including KITE-585 and KITE-796. We plan to file an IND to initiate a clinical trial for KITE-585 targeting BCMA for the treatment of multiple myeloma in 2017 and for KITE-796 targeting CLL-1 for the treatment of AML in 2018. KITE-796 is a Kite product candidate being developed under our collaboration with Amgen, and we expect KITE-796 to be a Control CAR that incorporates the molecular "on/off switch" technology that we licensed from CDL.

We are also funding an NCI Phase 1 clinical trial of a fully human anti-CD19 CAR. The trial's primary objective is to assess the safety of giving T cells expressing a fully-human anti-CD19 CAR to patients with advanced B-cell cancers. Patients are currently being enrolled into the Phase 1 dose escalation part of the trial and initial results from the trial are described under "Recent Developments-2017 American Society of Blood and Marrow Transplantation Meeting." We expect to progress a next generation humanized anti-CD19 Control CAR that utilizes molecular "on/off switch" technology that we have the option to license from CDL.

TCR-Based Product Candidates

We are also researching and developing multiple TCR-based product candidates. At the end of 2016, we filed an IND to initiate a clinical trial for KITE-718 targeting a MAGE A3/A6 antigen for the treatment of MAGE A3/A6 positive cancers including

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NSCLC and bladder cancer. The trial is designed to assess the safety and anti-tumor effect of KITE-718 on these solid tumors. KITE-718 is a HLA-DPB0401 restricted TCR. This HLA type is found in 50% to 70% of Caucasians.

A Phase 1-2a clinical trial of a TCR-based therapy targeting the MAGE A3/A6 antigen is being conducted by the NCI pursuant to one of our CRADAs. The trial's primary objectives are to determine (1) a safe dose for the administration of autologous T cells transduced with an anti-MAGE A3/A6 TCR, which is HLA-DPB0401/0402 restricted, and Interleukin-2, or IL-2, to patients following a nonmyeloablative but lymphoid depleting preparative regimen, (2) if this approach will result in objective tumor regression in patients with metastatic cancer expressing MAGE A3/A6 and (3) the toxicity profile of this treatment regimen. This trial's secondary objective is to determine the *in vivo* survival of gene-engineered cells. Fourteen patients were enrolled in the Phase 1 portion of the study. One patient with cervical cancer, one with esophageal cancer, and one with urothelial cancer each experienced partial responses without dose limiting toxicities. The patients with cervical cancer and urothelial cancer were in response more than 12 months after treatment.

We believe we have optimized KITE-718 from the NCI's anti-MAGE A3/A6 TCR by streamlining the manufacturing process through advanced technologies and next-generation cell culture manufacturing conditions. The NCI's product candidate utilized CD4 T cells only, had a manufacturing time of approximately 20 to 24 days and utilized IL-2 for cell expansion. For KITE-718, we expect to use CD4 and CD8 T cells, which we believe work synergistically. We also plan to shorten the manufacturing time to eight to ten days and use IL-7/IL-15 plus a protein kinase B (AKT) inhibitor, which we believe will help generate more naïve and central memory T cells that may have a greater potential to proliferate.

In 2018, we plan to file an IND for KITE-439 targeting HPV-16 E7 for the treatment of HPV-16 E7 positive cancers including cervical cancer and head and neck cancer.

Pursuant to our CRADAs, we are also funding or expect to fund clinical trials at the NCI involving TCR-based product candidates targeting certain HPV, MAGE, and KRAS antigens and neo-antigens.

With respect to developing a TCR-based product portfolio, we plan to use a novel Phase 2 design wherein patients with various cancers will be screened for tumor antigen expression as well as the patient specific HLA genotype. Patients will then be assigned a TCR-based therapy that matches both the tumor antigen expression and their presenting HLA protein. We believe this approach may allow for detection of promising benefit to risk profiles in multiple cancers in a single study.

Manufacturing, Processing and Delivering to Patients

Because it is important to rapidly treat patients with highly aggressive cancers, we have developed a T cell engineering process for KTE-C19 that takes approximately 14 to 16 days from receipt of the patient's white blood cells at our manufacturing facility to release for delivery to the site for infusion of the engineered T cells back to the patient. The processing of KTE-C19 begins with the collection of the patient's white blood cells using a standard blood bank procedure. The collected cells are then sent to a central processing facility, where the peripheral blood mononuclear cells, including T cells, are isolated from the other sample components. These cells are stimulated to proliferate, then transduced with a retroviral vector to introduce the CAR sequence into the patient's T cells. These engineered cells are then propagated in cell culture bags until a sufficient number of cells are available for infusion back into the patient. The engineered T cells are then washed and frozen at the cell processing site, and shipped back to the clinical center where they can be administered to the patient. In preparation for administration of the engineered T cells, the patient undergoes a short chemotherapy conditioning regimen, which is intended to improve the survival and proliferative capacity of the newly infused T cells.

Using our clinical manufacturing facilities in Santa Monica, California, we are processing KTE-C19 for our ZUMA clinical trials. Cell processing activities are conducted at our facilities under current good manufacturing practices, or cGMP, using qualified equipment and materials. We have engaged a third-party contractor to manufacture the retroviral vector that delivers the applicable CAR sequence into the T cells under cGMP. We believe all materials and components utilized in the production of the retroviral vector and final T cell product are readily available from qualified suppliers. We no longer rely on a contract manufacturer for clinical manufacturing of KTE-C19 for our U.S. clinical trials. We plan to rely on a contract manufacturer to assist with part of the manufacturing process for KTE-C19 for our clinical trials in Europe.

To meet projected needs for commercial demand, we have established a commercial manufacturing facility to supply and process KTE-C19 and other CAR- and TCR-based product candidates on a patient-by-patient basis. Our commercial manufacturing facility is in El Segundo, adjacent to Los Angeles International Airport. The facility is subject to an FDA inspection prior to any commercial manufacturing of KTE-C19, and, if the

facility passes the inspection and KTE-C19 is approved, we anticipate the El Segundo facility will be operational to support the planned U.S. commercial launch of KTE-C19

in 2017. We are also developing a technology platform to track orders electronically from patient enrollment to the collection of the patient's cells to infusion of KTE-C19.

In November 2015, we entered into a strategic research collaboration with GE Global Research to develop a next generation, functionally integrated and automated manufacturing system for engineered T cell therapy. We believe this collaboration will accelerate the development of automation technologies for engineered T cell therapy that have the potential to reduce cost, improve speed and minimize variability. Under the terms of the agreement, we and GE Global Research will each contribute resources and relevant expertise to the partnership.

Intellectual Property

Intellectual property is of vital importance in our field and in biotechnology generally. We seek to protect and enhance proprietary technology, inventions, and improvements that are commercially important to the development of our business by seeking, maintaining, and defending patent rights, whether developed internally or licensed from third parties. We will also seek to rely on regulatory protection afforded through orphan drug designations, data exclusivity, market exclusivity and patent term extensions where available.

To achieve this objective, a strategic focus for us has been to identify and license key patents that provide protection and serve as an optimal platform to enhance our intellectual property and technology base. Well before the field of adoptive T cell immunotherapy raised commercial interest and started its transition to an industrial environment, we initiated a process of identifying patents with broad coverage in the area of CARs. Between 2009 and 2013, we identified, and ultimately licensed, issued patents with broad claims directed to the CAR concept. These patents were originally filed by investigators at the Weizmann Institute of Science, the National Institutes of Health, or NIH, University of California San Francisco, or UCSF, and Cell Genesys. This process was finalized in December 2013.

This effort was paralleled by the creation and execution in August 2012 of our first CRADA. This agreement provides the framework under which we may license product-related intellectual property from the NIH to support our pipeline development and commercialization activities, as well as enhance and extend the lifetime of our patent portfolio.

Our intellectual property estate strategy is designed to provide multiple layers of protection, including: (1) patent rights with broad claims directed to core CAR constructs used in our products; (2) patent rights covering methods of treatment for therapeutic indications; (3) patent rights covering specific products; and (4) patent rights covering innovative manufacturing processes, preconditioning methods, new constructs and methods for genetically engineering T cells.

We believe our current layered patent estate, together with our efforts to develop and patent next generation technologies, provides us with substantial intellectual property protection. We have conducted extensive freedom to operate, or FTO, analyses of the current patent landscape with respect to our lead product candidate, and based on these analyses we believe that there are no valid claims in any third party patents, which would prevent our ability to commercialize KTE-C19. However, in an inter partes review, or IPR, proceeding, the U.S. Patent and Trademark Office, or USPTO, Patent Trial and Appeal Board declined to revoke a patent relating to certain CAR compositions of matter that we believe is invalid. This patent is owned by Memorial Sloan Kettering Cancer and Sloan Kettering Institute for Cancer Research, or MSK, and licensed by Juno Therapeutics, Inc., or Juno. Juno and MSK filed a patent infringement lawsuit against us on December 19, 2016 in the U.S. District Court of Appeals for the District of Delaware with respect to the MSK patent. We filed a Notice of Appeal to the IPR decision on February 16, 2017 and, on February 23, 2017, we filed a motion to dismiss the Juno and MSK lawsuit. While we believe that we have a meritorious basis for asserting that the MSK patent is invalid, patent litigation is full of uncertainties, and we cannot provide any assurances that we will prevail in these proceedings. For additional information on the lawsuit, see "Risk Factors-Third-party claims of intellectual property infringement may prevent or delay our product discovery and development efforts" and Note 11 to our financial statements appearing elsewhere in this Annual Report.

Our current patent estate includes an exclusive license to a patent portfolio owned by Cabaret Biotech Ltd., or Cabaret, and directed to CAR constructs developed by Dr. Zelig Eshhar, Yeda-Weizmann, NIH, UCSF and Cell Genesys. Our CAR construct-directed patent portfolio includes 10 issued U.S. patents, seven of which are directed to core construct composition of matter and two of which are directed to methods of treatment for therapeutic indications. These patents first began to expire in April 2015, with the last of these patents, which broadly claims scFv-based CAR constructs and is also our most significant CAR-related patent, expiring in 2027. The patent expiring in 2027 and one of the other licensed patents is subject to an ex parte reexamination before the USPTO, which may result in such patents being cancelled, narrowed or held unpatentable. These patents represent all of the material patents underlying KTE-C19. We are working to

develop the next generation of CAR and TCR technologies for use in this field, which we intend to patent on our own or to license from our collaborators, to expand this layer of our intellectual property estate.

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The identification of new technologies and initiation of the exclusive licensing process occur under the framework of the CRADAs between us and the NIH. Since entering into the first CRADA in August 2012, we have secured multiple commercial license agreements with the NIH for intellectual property relating to TCR-based product candidates targeting certain SSX2, NY-ESO-1, HPV, MAGE and KRAS antigens, for a CAR-based product candidate targeting EGFRvIII and for a fully-human CAR-based product candidate targeting CD19. Our MAGE and HPV product-specific intellectual property includes Patent Cooperation Treaty applications with priority dates in 2011, 2012, 2013, and 2014, corresponding U.S. non-provisional patent applications, and corresponding foreign patent applications in Canada, Australia, Europe, China, Israel, Japan, and certain others. The Patent Cooperation Treaty applications with 2013 and 2014 priority dates relate to our TCR-based product candidates targeting HPV antigens, and the Patent Cooperation Treaty applications with the 2011 and 2012 priority dates relate to our TCR-based product candidates targeting the MAGE antigen. We also have other strategic licenses for additional intellectual property rights as described under Note 6 to our financial statements appearing elsewhere in this Annual Report.

Our strategy is also to develop and obtain additional intellectual property covering innovative manufacturing processes, preconditioning methods, new constructs and methods for genetically engineering T cells. To support this effort, we have established expertise and development capabilities focused in the areas of preclinical research and development, manufacturing and manufacturing process scale-up, quality control, quality assurance, regulatory affairs and clinical trial design and implementation. We have filed multiple patent applications, jointly with the NCI, relating to our closed manufacturing process and improvements thereto, pre-conditioning regimen, pre-conditioning regimen with cytokines/biomarkers, and expect to continue to file patent applications to expand this layer of our intellectual property estate.

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 date of filing of the first non-provisional application to which priority is claimed. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier-filed patent. The term of a patent that covers an FDA-approved drug may also be eligible for a patent term restoration of up to five years under the Hatch-Waxman Act, which is designed to compensate for the patent term lost during the FDA regulatory review process. The length of the patent term restoration is calculated based on the length of time the drug is under regulatory review. A patent term restoration under the Hatch-Waxman Act 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 restored. Moreover, a patent can only be restored once, and thus, if a single patent is applicable to multiple products, it can only be extended based on one product. Similar provisions are available in Europe and certain other foreign jurisdictions to extend the term of a patent that covers an approved drug. When possible, depending upon the length of clinical trials and other factors involved in the submission of a BLA, we expect to apply for patent term extensions for patents covering our product candidates and their methods of use.

Our commercial success may depend in part on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents; preserve the confidentiality of our trade secrets; and operate without infringing the valid enforceable patents and proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell or importing our products may depend on the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our commercial products and methods of manufacturing the same.

We may rely, in some circumstances, on trade secrets to protect our technology. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants, contractors or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Our Licenses and Collaborations

We have entered into multiple strategic licenses and collaborations, including with the NIH, Cabaret, Amgen, bluebird bio, Inc., CDL, AIS, Leukemia & Lymphoma Society, Inc., Fosun Pharma and Daiichi Sankyo.

For additional information regarding our significant agreements, see Notes 6 and 13 to our financial statements appearing elsewhere in this Annual Report.

Competition

Presently, the biotechnology and pharmaceutical industries put significant resources in developing novel and proprietary therapies for the treatment of cancer. We compete with companies in the space of immunotherapy, as well as companies developing novel targeted therapies for cancer. We anticipate that we will face intense and increasing competition as new drugs and therapies enter the market and advanced technologies become available.

Due to their promising clinical therapeutic effect in clinical exploratory trials, we anticipate substantial direct competition from other organizations developing advanced T cell therapies. In particular, we expect to compete with (1) therapies with tumor infiltrating lymphocytes, or TILs, that are naturally occurring tumor-reactive T cells harvested, propagated ex vivo and re-infused into patients; and (2) therapies with engineered T cells, similar to our engineered autologous cell therapy, rendered reactive against tumor-associated antigens prior to their administration to patients. TIL therapy and genetically engineering T cells are being pursued by multiple companies, including Novartis, Juno Therapeutics, Adaptimmune LLC, Celgene Corporation, bluebird bio, Inc., Lion Biotechnologies, Mustang Bio, Inc., ZIOPHARM Oncology, Inc., Takara Bio Inc., Immunocore Limited as well as a number of China-based companies. In particular, Novartis and Juno Therapeutics, with the support of Celgene Corporation, are in the process of research and development of their own versions of anti-CD19 CAR T cell therapies and we expect Adaptimmune to compete with any TCR-based product candidates that we develop. In addition, some companies, such as Cellectis, are pursuing allogeneic T cell products, including an anti-CD19 allogeneic T cell product, that could compete with KTE-C19 and our other CAR- and TCR-based product candidates as well as any future allogeneic T cell products we develop.

While we believe that other known types of immunotherapies, including those described under “—Other Immunotherapies” above, may potentially be used in conjunction with engineered autologous cell therapy, such as CPIs, to enhance efficacy, we do not expect substantial direct competition from these other types of immunotherapies. However, we cannot predict whether other types of immunotherapies may be enhanced and show greater efficacy, and we may have direct and substantial competition from such immunotherapies in the future.

Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources. Accordingly, our competitors may be more successful than us in obtaining approval for treatments and achieving widespread market acceptance and may render our treatments obsolete or non-competitive. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical study sites and patient registration for clinical studies, as well as in acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

Government Regulation and Product Approval

As a biopharmaceutical company that operates in the United States, we are subject to extensive regulation. Our cell products will be regulated as biologics. With this classification, commercial production of our products will need to occur in registered and licensed facilities in compliance with cGMP for biologics. The FDA categorizes human cell- or tissue-based products as either minimally manipulated or more than minimally manipulated, and has determined that more than minimally manipulated products require clinical trials to demonstrate product safety and efficacy and the submission of a BLA for marketing authorization.

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, manufacturing, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of biopharmaceutical products such as those we are developing. Our product candidates must be approved by the FDA before they may be legally marketed in the United States and by the appropriate foreign regulatory agency before they may be legally marketed in foreign countries. Generally, our activities in other countries will be subject to regulation that is similar in nature and scope as that imposed in the United States, although there can be important differences. Additionally, some significant aspects of regulation in Europe are addressed in a centralized

way, but country-specific regulation remains essential in many respects. The process for obtaining regulatory marketing approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources.

U.S. Product Development Process

In the United States, the FDA regulates pharmaceutical and biological products under the Federal Food, Drug and Cosmetic Act, or FDCA, the Public Health Service Act, or PHSA, and their implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant to administrative or judicial sanctions. FDA sanctions could include, among other actions, refusal to approve pending applications, withdrawal of an approval, a clinical hold, warning letters, product recalls or withdrawals from the market, product seizures, total or partial suspension of production or distribution injunctions, fines, refusals of government contracts, restitution, disgorgement or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us. The process required by the FDA before a biological product may be marketed in the United States generally involves the following:

- completion of nonclinical laboratory tests and animal studies according to good laboratory practices, or GLPs, and applicable requirements for the humane use of laboratory animals or other applicable regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- performance of adequate and well-controlled human clinical trials according to the FDA's regulations commonly referred to as good clinical practices, or GCPs, and any additional requirements for the protection of human research patients and their health information, to establish the safety and efficacy of the proposed biological product for its intended use;
- submission to the FDA of a BLA for marketing approval that includes substantive evidence of safety, purity, and potency from results of nonclinical testing and clinical trials;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the biological product is produced to assess compliance with cGMP, to assure that the facilities, methods and controls are adequate to preserve the biological product's identity, strength, quality and purity and, if applicable, the FDA's current good tissue practices, or GTPs, for the use of human cellular and tissue products;
- potential FDA audit of the nonclinical study and clinical trial sites that generated the data in support of the BLA; and
- FDA review and approval, or licensure, of the BLA.

The clinical trial sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA raises concerns or questions regarding the proposed clinical trials and places the trial on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a biological product candidate at any time before or during clinical trials due to safety concerns or non-compliance. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate such trials.

Clinical trials involve the administration of the biological product candidate to patients under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical trial will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted and monitored in accordance with the FDA's regulations comprising the GCP requirements, including the requirement that all research patients provide informed consent. Further, each clinical trial must be reviewed and approved by an independent institutional review board, or IRB, at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. Clinical trials also must be reviewed by an institutional biosafety committee, or IBC, a local institutional

committee that reviews and oversees basic and clinical research conducted at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- *Phase 1.* The biological product is initially introduced into healthy human subjects and tested for safety. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients.
- *Phase 2.* The biological product is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.
- *Phase 3.* Clinical trials are undertaken to further evaluate dosage, clinical efficacy, potency, and safety in an expanded patient population at geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk to benefit ratio of the product and provide an adequate basis for product labeling.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA, the NIH and the investigators for serious and unexpected adverse events, any findings from other studies, tests in laboratory animals or in vitro testing that suggest a significant risk for human patients, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor or its data safety monitoring board may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk, including risks inferred from other unrelated immunotherapy trials. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the biological product has been associated with unexpected serious harm to patients.

Human immunotherapy products are a new category of therapeutics. Because this is a relatively new and expanding area of novel therapeutic interventions, there can be no assurance as to the length of the trial period, the number of patients the FDA will require to be enrolled in the trials in order to establish the safety, efficacy, purity and potency of immunotherapy products, or that the data generated in these trials will be acceptable to the FDA to support marketing approval.

Concurrently with clinical trials, companies usually complete additional studies and must also develop additional information about the physical characteristics of the biological product as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents with use of biological products, the PHSA emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final biological product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life.

U.S. Review and Approval Processes

After the completion of clinical trials of a biological product, FDA approval of a BLA must be obtained before commercial marketing of the biological product. The BLA must include results of product development, laboratory and animal studies, human trials, information on the manufacture and composition of the product, proposed labeling and other relevant information. The FDA may grant deferrals for submission of data or full or partial waivers. The testing and approval processes require substantial time and effort and there can be no assurance that the FDA will accept the BLA for filing and, even if filed, that any approval will be granted on a timely basis, if at all.

Under the Prescription Drug User Fee Act, or PDUFA, as amended, each BLA must be accompanied by a significant user fee. The FDA adjusts the PDUFA user fees on an annual basis. PDUFA also imposes an annual product fee for biological products and an annual establishment fee on facilities used to

manufacture prescription biological products. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small

business. Additionally, no user fees are assessed on BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

Within 60 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the agency accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. The resubmitted application also is 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 of the BLA. The FDA reviews the BLA to determine, among other things, whether the proposed product is safe, potent, and/or effective for its intended use, and has an acceptable purity profile, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, safety, strength, quality, potency and purity. The FDA may refer applications for novel biological products or biological products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and 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. During the biological product approval process, the FDA also will determine whether a Risk Evaluation and Mitigation Strategy, or REMS, is necessary to assure the safe use of the biological product. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS. The FDA will not approve a BLA without a REMS, if required.

Before approving a BLA, the FDA will inspect the facilities at which the product is manufactured. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. For immunotherapy products, the FDA also will not approve the product if the manufacturer is not in compliance with the GTPs, to the extent applicable. These are FDA regulations and guidance documents that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue based products, or HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing. Additionally, before approving a BLA, the FDA will typically inspect one or more clinical sites to assure that the clinical trials were conducted in compliance with IND trial requirements and GCP requirements. To assure cGMP, GTP and GCP compliance, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production, and quality control.

Notwithstanding the submission of relevant data and information, the FDA may ultimately decide that the BLA does not satisfy its regulatory criteria for approval and deny approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data. If the agency decides not to approve the BLA in its present form, the FDA will issue a complete response letter that describes all of the specific deficiencies in the BLA identified by the FDA. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trials. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the BLA, addressing all of the deficiencies identified in the letter, or withdraw the application.

If a product receives regulatory approval, the approval may be limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. The FDA may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a risk management plan, or otherwise limit the scope of any approval. In addition, the FDA may require post marketing clinical trials, sometimes referred to as Phase 4 clinical trials, designed to further assess a biological product's safety and effectiveness, and testing and surveillance programs to monitor the safety of approved products that have been commercialized.

In addition, under the Pediatric Research Equity Act, or PREA, a BLA or supplement to a BLA must contain data 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. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, PREA does not apply to any product for an indication for which orphan designation has been granted. However, if only one indication for a product has orphan

designation, a pediatric assessment may still be required for any applications to market that same product for the non-orphan indication(s).

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available in the United States a drug or biologic for this type of disease or condition will be recovered from sales in the United States for that drug or biologic. Orphan drug designation must be requested before submitting a BLA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. The orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full BLA, to market the same biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the BLA application user fee. A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

We have received orphan drug designation for KTE-C19 for the treatment of DLBCL, PMBCL, ALL, MCL, CLL, and FL. There can be no assurance that we will receive orphan drug designation for additional indications or for any additional product candidates.

Expedited Development and Review Programs

The FDA has a fast track program that is intended to expedite or facilitate the process for reviewing new products that meet certain criteria. Specifically, new products are eligible for fast track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. Unique to a fast track product, the FDA may consider for review sections of the BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the BLA, the FDA agrees to accept sections of the BLA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the BLA.

Any product, submitted to the FDA for approval, including a product with a fast track designation, may also be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. A product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new product designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Products studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug or biological product receiving accelerated approval perform adequate and well-controlled post-marketing clinical studies. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Fast track designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

Breakthrough therapy designation is intended to expedite the development and review of products that treat serious or life-threatening conditions. The designation by FDA requires preliminary clinical evidence that a product candidate demonstrates substantial improvement over currently available therapy. The

designation includes all of the fast track program features, as well as more intensive FDA interaction and guidance. The breakthrough therapy designation is a distinct status from both

accelerated approval and priority review, which can also be granted to the same product if relevant criteria are met. If a product is designated as breakthrough therapy, FDA will expedite the development and review of such product.

In December 2015, the FDA granted breakthrough therapy designation status to KTE-C19 for the treatment of patients with refractory DLBCL, PMBCL and TFL.

Post-Approval Requirements

Any products for which we receive FDA approvals are subject to continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting of adverse experiences with the product, providing the FDA with updated safety and efficacy information, product sampling and distribution requirements, and complying with FDA promotion and advertising requirements, which include, among others, standards for direct-to-consumer advertising, restrictions on promoting products for uses or in patient populations that are not described in the product's approved uses (known as "off-label use"), limitations on industry-sponsored scientific and educational activities, and requirements for promotional activities involving the internet. Although a physician may prescribe a legally available product for an off-label use, if the physician deems such product to be appropriate in his/her professional medical judgment, a manufacturer may not market or promote off-label uses.

In addition, quality control and manufacturing procedures must continue to conform to applicable manufacturing requirements after approval to ensure the long-term stability of the product. cGMP regulations require among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation and the obligation to investigate and correct any deviations from cGMP. Manufacturers and other entities involved in the manufacture and distribution of approved products are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved BLA, including, among other things, recall or withdrawal of the product from the market. In addition, changes to the manufacturing process are strictly regulated, and depending on the significance of the change, may require prior FDA approval before being implemented. Other types of changes to the approved product, such as adding new indications and claims, are also subject to further FDA review and approval.

The FDA also may require post-marketing testing, known as Phase 4 testing, and surveillance to monitor the effects of an approved product. Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, judicial or administrative enforcement, warning letters from the FDA, mandated corrective advertising or communications with doctors, and civil or criminal penalties, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. Also, new government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development.

U.S. Marketing Exclusivity

The Biologics Price Competition and Innovation Act, or BPCIA, amended the PHSA to authorize the FDA to approve similar versions of innovative biologics, commonly known as biosimilars. A competitor seeking approval of a biosimilar must file an application to establish its molecule as highly similar to an approved innovator biologic, among other requirements. The BPCIA, however, bars the FDA from approving biosimilar applications for 12 years after an innovator biological product receives initial marketing approval. This 12-year period of data exclusivity may be extended by six months, for a total of 12.5 years, if the FDA requests that the innovator company conduct pediatric clinical investigations of the product. As an innovative biological product, KTE-C19 would receive this data protection if the FDA approves it for marketing.

Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued "Written Request" for such a trial.

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In the United States, our activities are potentially subject to regulation by various federal, state and local authorities in addition to the FDA, including but not limited to, the Centers for Medicare and Medicaid Services, or CMS, other divisions of the U.S. Department of Health and Human Services (e.g., the Office of Inspector General), the U.S. Department of Justice, or DOJ, and individual U.S. Attorney offices within the DOJ, and state and local governments. For example, our business practices, including our sales, marketing and scientific/educational grant programs may be required to comply with the anti-fraud and abuse provisions of the Social Security Act, the false claims laws, the patient data privacy and security provisions of the Health Insurance Portability and Accountability Act, or HIPAA, transparency requirements, and similar state laws, each as amended.

The federal Anti-Kickback Statute 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 the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term remuneration has been interpreted broadly to include anything of value. The federal Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, and formulary managers on the other. There are a number of 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, purchasing or recommending 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. Our practices may not in all cases meet all of the criteria for protection under a statutory exception or regulatory safe harbor.

Additionally, the intent standard under the federal Anti-Kickback Statute was amended by the Patient Protection Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, collectively, the Affordable Care Act, to a stricter standard such that a person or entity no longer needs to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it in order to have committed a violation. Rather, if “one purpose” of the remuneration is to induce referrals, the federal Anti-Kickback Statute is violated. In addition, the Affordable Care Act codified case law that a claim that includes items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act (discussed below).

The civil monetary penalties statute imposes penalties against any person or entity who, among other things, is determined to have presented or caused to be presented a claim to, among others, a federal healthcare program that the person knows or should know is for a medical or other item or service that was not provided as claimed or is false or fraudulent.

The federal civil False Claims Act prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to, or approval by, the federal government or 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. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes “any request or demand” for money or property presented to the U.S. government. Several pharmaceutical and other healthcare companies are being investigated or, in the past, have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies’ marketing of the product for unapproved, and thus non-reimbursable, uses.

HIPAA created additional federal criminal statutes that prohibit 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 money or property owned by, or under the control or custody of, any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up by trick, scheme or device, a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

Also, many states have similar fraud and abuse statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

We may be subject to data privacy and security regulations by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic

and Clinical Health Act, or HITECH, and their implementing regulations, imposes requirements on certain types of individuals and entities relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to business associates that are independent contractors or agents of covered entities

that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, 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, state laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Additionally, the federal Physician Payments Sunshine Act within the Affordable Care Act, and its implementing regulations, require that certain manufacturers of drugs, devices, biological and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) report information related to certain payments or other transfers of value made or distributed to physicians and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to report annually certain ownership and investment interests held by physicians and their immediate family members.

In order to distribute products commercially, we must comply with state laws that require the registration of manufacturers and wholesale distributors of drug and biological products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state. Some states also impose requirements on manufacturers and distributors to establish the pedigree of product in the chain of distribution, including some states that require manufacturers and others to adopt new technology capable of tracking and tracing product as it moves through the distribution chain. Several states have enacted legislation requiring pharmaceutical and biotechnology companies to establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales, marketing, pricing, clinical trials and other activities, and/or register their sales representatives, as well as to prohibit pharmacies and other healthcare entities from providing certain physician prescribing data to pharmaceutical and biotechnology companies for use in sales and marketing, and to prohibit certain other sales and marketing practices. All of our activities are potentially subject to federal and state consumer protection and unfair competition laws.

If our operations are found to be in violation of any of the federal and state healthcare laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including without limitation, civil, criminal and/or administrative penalties, damages, fines, disgorgement, exclusion from participation in government programs, such as Medicare and Medicaid, injunctions, private "qui tam" actions brought by individual whistleblowers in the name of the government, or refusal to allow us to enter into government contracts, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, 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.

Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In the United States and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend, in part, on the extent to which third-party payors provide coverage, and establish adequate reimbursement levels for such products. In the United States, third-party payors include federal and state healthcare programs, private managed care providers, health insurers and other organizations. The process for determining whether a third-party payor will provide coverage for a product may be separate from the process for setting the price of a product or for establishing the reimbursement rate that such a payor will pay for the product. Third-party payors may limit coverage to specific products on an approved list, or also known as a formulary, which might not include all of the FDA-approved products for a particular indication. Third-party payors are increasingly challenging the price, examining the medical necessity and reviewing the cost-effectiveness of medical products, therapies and services, in addition to questioning their safety and efficacy. We may need to conduct expensive pharmaco-economic 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. A payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage for the product. 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 product development.

Different pricing and reimbursement schemes exist in other countries. In the EU, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under which

products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines, but monitor and control company profits. The downward pressure on health care costs has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

The marketability of any product candidates for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide adequate coverage and reimbursement. In addition, emphasis on managed care in the United States has increased and we expect will continue to increase the pressure on healthcare pricing. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare Reform

In March 2010, President Obama enacted the Affordable Care Act, which is substantially changing healthcare financing and delivery by both governmental and private insurers, and significantly impacting the pharmaceutical and biotechnology industry.

Among the Affordable Care Act's provisions of importance to the pharmaceutical and biotechnology industries, in addition to those otherwise described above, are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively and a cap on the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price, or AMP;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively and a cap on the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price, or AMP;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative effectiveness research, along with funding for such research.

Since its enactment, there have been judicial and Congressional challenges to numerous provisions of the Affordable Care Act. In January, Congress voted to adopt a budget resolution for fiscal year 2017, or the Budget Resolution, that authorizes the implementation of legislation that would repeal portions of the Affordable Care Act. The Budget Resolution is not a law, but it is widely viewed as the first step toward the passage of legislation that would repeal certain aspects of the Affordable Care Act. Further, on January 20, 2017, President Trump signed an Executive Order directing federal agencies with authorities and

responsibilities under the Affordable Care Act to waive, defer, grant exemptions from, or delay the implementation of any provision of the Affordable Care Act that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. Congress also could consider subsequent

legislation to replace elements of the Affordable Care Act that are repealed. We will continue to evaluate the effect that the Affordable Care Act and any future measures to repeal or replace the Affordable Care Act have on our business.

Further, in January 2016, CMS issued a final rule regarding the Medicaid drug rebate program. The final rule, effective April 1, 2016, among other things, revises the manner in which the “average manufacturer price” is to be calculated by manufacturers participating in the Medicaid drug rebate program and implements certain amendments to the Medicaid drug rebate program included in the Affordable Care Act. In addition, it is possible that there will be further legislation or regulation that could harm our business, financial condition, and results of operations.

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.

Additional Regulation

In addition to the foregoing, state and federal laws regarding environmental protection and hazardous substances, including the Occupational Safety and Health Act, the Resource Conservancy and Recovery Act and the Toxic Substances Control Act, affect our business. These and other laws govern our use, handling and disposal of various biological, chemical and radioactive substances used in, and wastes generated by, our operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. We believe that we are in material compliance with applicable environmental laws and that continued compliance therewith will not have a material adverse effect on our business. We cannot predict, however, how changes in these laws may affect our future operations.

Europe / Rest of World Government Regulation

In addition to regulations in the United States, we will be subject to a variety of regulations in other jurisdictions governing, among other things, clinical trials and any commercial sales and distribution of our products. Whether or not we obtain FDA approval of a product, we must obtain the requisite approvals from regulatory authorities in foreign countries prior to the commencement of clinical trials or marketing of the product in those countries. Certain countries outside of the United States have a similar process that requires the submission of a clinical trial application much like the IND prior to the commencement of human clinical trials. In the EU, for example, a clinical trial application must be submitted to each country's national health authority and an independent ethics committee, much like the FDA and IRB, respectively. Once the clinical trial application is approved in accordance with a country's requirements, clinical trial development may proceed. Because biologically sourced raw materials are subject to unique contamination risks, their use may be restricted in some countries.

The requirements and process governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, the clinical trials must be conducted in accordance with GCP and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

To obtain regulatory approval of an investigational drug or biological product under EU regulatory systems, we must submit an MAA. The application used to file the BLA in the United States is similar to that required in the EU, with the exception of, among other things, country-specific document requirements. The European Commission has granted KTE-C19 orphan drug designation to treat DLBCL, PMBCL, ALL, MCL, CLL, small lymphocytic lymphoma, and FL. The designation may provide 10 years of market exclusivity in Europe, subject to certain limited exceptions. However, the designation does not convey any advantage in, or shorten the duration of, the regulatory review or approval process.

For other countries outside of the EU, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, again, the clinical trials must be conducted in accordance with GCP

and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

If we or our potential collaborators fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Employees

As of February 15, 2017, we had 447 employees, including employees of Kite Pharma EU. None of our employees are subject to a collective bargaining agreement. We consider our relationship with our employees to be good.

Corporate Information

We were incorporated in Delaware in June 2009. Our principal executive offices are located at 2225 Colorado Avenue, Santa Monica, California 90404, and our telephone number is (310) 824-9999. Our corporate website address is www.kitepharma.com. We file Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and other information with the SEC. Our filings with the SEC are available free of charge on the SEC's website at www.sec.gov and on our website under the "Investors" tab as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. You may also read and copy, at SEC prescribed rates, any document we file with the SEC at the SEC's Public Reference Room located at 100 F Street, N.E., Washington D.C. 20549. You can call the SEC at 1-800-SEC-0330 to obtain information on the operation of the Public Reference Room. The contents of our website are not incorporated into this Annual Report and our reference to the URL for our website is intended to be an inactive textual reference only.

Unless the context requires otherwise, references in this Annual Report to "we," "us", "our" and "Kite" refer to Kite Pharma, Inc. and its subsidiaries.

Item 1A. Risk Factors

An investment in shares of our common stock involves a high degree of risk. You should carefully consider the following risk factors, as well as the other information in this Annual Report. The occurrence of any of the following risks could harm our business, financial condition, results of operations and growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this Annual Report and those we may make from time to time.

Risks Related to Our Business and Industry

We have incurred net losses in every year since our inception and anticipate that we will continue to incur net losses in the future.

We are a clinical-stage biopharmaceutical company with a limited operating history. 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 effect or an acceptable safety profile, gain regulatory approval and become commercially viable. 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. As a result, we are not profitable and have incurred losses in each period since our inception in June 2009. For the years ended December 31, 2016 and 2015, we reported a net loss of \$267.1 million and \$101.7 million, respectively. As of December 31, 2016, we had an accumulated deficit of \$426.7 million. We expect to continue to incur significant expenditures for the foreseeable future, and we expect these expenditures to increase as we plan for the potential commercial launch of our lead product candidate, KTE-C19, and as we continue our research and development of, and seek regulatory approvals for, product candidates based on our engineered autologous cell therapy. Even if we succeed in commercializing one or more of our product candidates, we will continue to incur substantial research and development and other expenditures to develop and market additional product candidates. 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.

Our engineered autologous cell therapy represents a novel approach to cancer treatment that creates significant challenges for us.

Our therapy involves (1) harvesting T cells from the patient's blood, (2) engineering T cells to express cancer-specific receptors, (3) increasing the number of engineered T cells and (4) infusing the functional

cancer-specific T cells back into the patient. Advancing this novel and personalized therapy creates significant challenges for us, including:

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- educating medical personnel regarding the potential side effect profile of our therapy, such as the potential adverse side effects related to cytokine release syndrome, or CRS, and neurotoxicity;
- using medicines to manage adverse side effects of our therapy, such as tocilizumab and corticosteroids, which may not adequately control the side effects and/or may have a detrimental impact on the efficacy of the treatment;
- sourcing clinical and, if approved, commercial supplies for the materials used to manufacture and process our product candidates;
- developing a robust and reliable process, while limiting contamination risks, for engineering a patient's T cells *ex vivo* and infusing the engineered T cells back into the patient;
- conditioning patients with chemotherapy in advance of administering our product candidates, which may increase the risk of adverse side effects;
- obtaining regulatory approval, as the U.S. Food and Drug Administration, or FDA, and other regulatory authorities have limited experience with commercial development of T cell therapies for cancer; and
- establishing sales and marketing capabilities upon obtaining any regulatory approval to gain market acceptance of a novel therapy.

In addition, we use manufacturing and processing approaches to produce engineered T cells that are based on the original approach used by our collaborator, the National Cancer Institute, or NCI. While the NCI has and is expected to use CAR- and TCR-based therapies in clinical trials that we are funding under Cooperative Research and Development Agreements, or CRADAs, we cannot be sure that our engineered T cell therapy will obtain the same safety and efficacy results as those obtained or may be obtained by the NCI using its own original production methods.

Our business is highly dependent on the success of KTE-C19, our lead product candidate. If we are unable to obtain approval for KTE-C19 and effectively commercialize KTE-C19 for the treatment of patients in its approved indications, our business would be significantly harmed.

Our business and future success depends on our ability to obtain regulatory approval of and then successfully commercialize our lead product candidate, KTE-C19. We plan to complete a Biologics License Application, or BLA, submission to the FDA in the first quarter of 2017 for accelerated approval of KTE-C19 as a treatment for patients with relapsed or refractory aggressive non-Hodgkin lymphoma, or NHL, who are ineligible for autologous stem cell transplant, or ASCT. If we are unable to submit our BLA in a timely manner or the FDA does not approve our BLA submission, our business would be significantly harmed.

If approved, KTE-C19 will be our only product approved for marketing and our ability to generate revenue from product sales is dependent on our ability to effectively commercialize KTE-C19. Our plans for commercial operations, marketing and account management, and access may fail and we may not be able to fully realize the commercial potential of KTE-C19 for a number of reasons, including:

- we may not be able to obtain and maintain regulatory approval to market KTE-C19 for the indication we are seeking and for additional indications, such as relapsed or refractory mantle cell lymphoma, or MCL, and acute lymphoblastic leukemia, or ALL;
- additional follow-up results from our ZUMA clinical trials or any required post-approval studies may fail to verify the clinical benefit of KTE-C19 in some or all of any approved indications, which could result in the withdrawal of KTE-C19 from the market;
- the use of engineered T cells as a potential cancer treatment is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers and others in the medical community;
- we may not be able to establish or demonstrate in the medical community the safety and efficacy of KTE-C19 and its potential advantages over and side effects compared to existing and future therapeutics;
- physicians may be reluctant to prescribe KTE-C19 until results from any required post-approval studies are available or other long term efficacy and safety data exists;
- the FDA currently requires, as a condition for accelerated approval, pre-approval of promotional materials, which could adversely impact how we market and sell KTE-C19;
- the estimated incidence rate of new patients in any KTE-C19 approved indications may be lower than our projections;
- new competitive therapies may be approved for marketing by regulatory authorities in KTE-C19's labeled indications;
- our commercial manufacturing facility may not pass pre-approval FDA inspection;
- we may not be able to manufacture adequate commercial supplies of KTE-C19 or obtain raw materials to meet demand or at an acceptable cost;
- we may be unable to scale our employee base to meet demands;

- we may be unable to manage the logistics of providing patient-by-patient therapy on a commercial scale;

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- our Kite Konnect and associated technology platform, which will track orders from patient enrollment to the collection of the patient's cells to infusion of KTE-C19, may not be sufficiently developed by the time of launch or may face technical issues post-launch;
- we may be unable to develop an adequate in-house marketing organization and sales force;
- if any approval is received sooner than expected, we may not be ready to launch KTE-C19 or meet demand;
- KTE-C19 may receive adverse reimbursement and coverage policies from government and private payors such as Medicare, Medicaid, insurance companies, health maintenance organizations and other plan administrators or may be subject to pricing pressures enacted by industry organizations;
- there may be changed or increased regulatory restrictions; and
- we may not have adequate financial or other resources to effectively commercialize KTE-C19.

To ensure that any site collecting patient white blood cells, known as apheresis centers, is prepared to ship cells to our manufacturing facility, we plan to conduct quality certifications of each apheresis center. Accordingly, while our commercial plan is to target over 70 key transplant and lymphoma centers over a 12-month period post-launch, the related apheresis centers may not participate in the certification or we may be unable to complete certification in a timely manner or at all.

In addition, because KTE-C19 is our most advanced product candidate, and because our other product candidates are based on similar technology, if KTE-C19 encounters safety, efficacy, manufacturing, regulatory or commercialization difficulties, our development plans and business would be significantly harmed.

Our product candidates may cause undesirable side effects or have other properties that could halt their clinical development, prevent their regulatory approval, limit their commercial potential or result in significant negative consequences.

Undesirable or unacceptable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authorities. Results of our trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics.

In the ZUMA-1 trial, the most common grade 3 or higher adverse events included anemia (43%), neutropenia (39%), decreased neutrophil count (32%), febrile neutropenia (31%), decreased white blood cell count (29%), thrombocytopenia (24%), encephalopathy (21%) and decreased lymphocyte count (20%). As compared to the interim analysis, grade 3 or higher CRS decreased from 18% to 13% and neurologic events decreased from 34% to 28%. As previously reported at the 2016 American Society of Hematology, or ASH, Annual Meeting, there were three deaths not due to disease progression in the study. Two events, one hemophagocytic lymphohistiocytosis and one cardiac arrest in the setting of CRS, were deemed related to KTE-C19. The third case, a pulmonary embolism, was deemed unrelated.

In addition, as reported at the 2016 ASH Annual Meeting, in ZUMA-3 and ZUMA-4, five of 13 (38%) patients had grade 3 or higher CRS and five of 13 (38%) had grade 3 or higher neurological events. One patient in ZUMA-3 died from KTE-C19 related CRS and one patient in ZUMA-4 died from a disseminated fungal infection unrelated to KTE-C19.

Patients in our clinical trial of KITE-718 and the NCI clinical trials of the TCR-based product candidates are expected to receive interleukin-2, or IL-2, which is associated with toxicities such as capillary leak syndrome, hypotension, impaired kidney and liver function, and mental status changes. While we believe we have optimized KITE-718 from the NCI's anti-MAGE A3/A6 TCR, our optimizations may have adverse outcomes for patients. For instance, we plan to shorten the manufacturing time to eight to ten days and use IL-7/IL-15 plus a protein kinase B (AKT) inhibitor. However, cell products manufactured using IL-7/IL-15 and AKT inhibitor have not been administered in humans to date and may have an adverse impact on efficacy or safety.

If unacceptable toxicities arise in the development of our product candidates, we or the NCI could suspend or terminate our trials or the FDA or comparable foreign regulatory authorities could order us to cease clinical trials or deny approval of our product candidates for any or all targeted indications. Treatment-related side effects could also affect patient recruitment or the ability of enrolled subjects to complete the trial or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff, particularly outside of the NCI as toxicities resulting from personalized T cell therapy are not normally encountered in the general patient population and by medical personnel. We have trained and expect to have to train medical personnel using CAR- or TCR-based

product candidates to understand the side effect profile of our product candidates for both our clinical trials and upon any commercialization of any of our product

candidates. Inadequate training in recognizing or managing the potential side effects of our product candidates could result in patient deaths. Any of these occurrences may harm our business, financial condition and prospects significantly.

The market opportunities for our product candidates may be limited to those patients who are ineligible for or have failed prior treatments and may be small.

The FDA often approves new therapies initially only for use in patients with relapsed or refractory metastatic disease. We expect to initially seek approval of KTE-C19 and our other product candidates in this setting. Subsequently, for those products that prove to be sufficiently beneficial, if any, we would expect to seek approval in earlier lines of treatment and potentially as a first line therapy, but there is no guarantee that our product candidates, even if approved, would be approved for earlier lines of therapy, and, prior to any such approvals, we will have to conduct additional clinical trials.

Our projections of both the number of people who have the cancers we are targeting, as well as the subset of people with these cancers in a position to receive second or later lines of therapy, and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations, or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these cancers. The number of patients may turn out to be lower than expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. For instance, we expect our lead product candidate, KTE-C19, to initially target a small patient population that suffers from aggressive NHL and ALL. Even if we obtain significant market share for our product candidates, because the potential target populations are small, we may never achieve profitability without obtaining regulatory approval for additional indications.

Our clinical trials may fail to demonstrate adequately the safety and efficacy of any of our product candidates, which would prevent or delay regulatory approval and commercialization.

Before obtaining regulatory approvals for the commercial sale of our product candidates, including KTE-C19, we must demonstrate through lengthy, complex and expensive preclinical testing and clinical trials that our product candidates are both safe and effective for use in each target indication. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials, including in any post-approval studies of KTE-C19. We expect there may be greater variability in results for products processed and administered on a patient-by-patient basis, like engineered autologous cell therapy, than for “off-the-shelf” products, like many drugs. There is typically an extremely high rate of attrition from the failure of product candidates proceeding through clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy profile despite having progressed through preclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy, insufficient durability of efficacy or unacceptable safety issues, notwithstanding promising results in earlier trials. Most product candidates that commence clinical trials are never approved as products.

We designed our Phase 1-2 (ZUMA-1) single-arm multicenter clinical trial of KTE-C19 primarily to assess safety and efficacy in patients with refractory diffuse large B cell lymphoma, or DLBCL, primary mediastinal B cell lymphoma, or PMBCL, and transformed follicular lymphoma, or TFL. The results from the primary analysis of ZUMA-1 as well as from the NCI clinical trials of anti-CD19 CAR T cell therapy may not predict results for any required post-approval trial of KTE-C19 or in our other clinical trials of KTE-C19 in different indications. Our ongoing clinical trials of KTE-C19 may be halted prior to completion if there is an unacceptable safety risk for patients.

In addition, for ZUMA-1 and any future trials that may be completed, we cannot guarantee that the FDA or foreign regulatory authorities will interpret the results as we do, and more trials could be required before we submit our product candidates for approval. To the extent that the results of the trials are not satisfactory to the FDA or foreign regulatory authorities for support of a marketing application, approval of our product candidates may be significantly delayed, or we may be required to expend significant additional resources, which may not be available to us, to conduct additional trials in support of potential approval of our product candidates.

We may not be able to file investigational new drug applications, or INDs, to commence additional clinical trials on the timelines we expect, and even if we are able to, the FDA may not permit us to proceed.

We expect to submit an IND for KITE-585 and IND amendments for additional studies of KTE-C19 in 2017 and INDs for KITE-796 and KITE-439 in 2018. However, our timing of filing on the product candidates is dependent on further research. We cannot be sure that submission of an IND or IND amendment will result in the FDA allowing further clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate such clinical trials. For instance, the FDA may not allow us to use the NCI clinical trial data to support our INDs. Additionally, even if such regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND or clinical trial application, we cannot guarantee that such regulatory authorities will not change their requirements in the future.

We have limited experience as a company conducting clinical trials.

While we are currently conducting multiple clinical trials of KTE-C19 and plan to initiate a clinical trial of KITE-718 in the first half of 2017, we have limited experience as a company in conducting clinical trials. In part because of this lack of experience, we cannot be certain that our ongoing clinical trials will be completed on time or if the planned clinical trials will begin or be completed on time, if at all. Large-scale trials require significant financial and management resources, and reliance on third-party clinical investigators, contract research organizations, or CROs, or consultants. Relying on third-party clinical investigators or CROs may force us to encounter delays that are outside of our control.

Monitoring safety of patients receiving our product candidates is challenging, which could adversely affect our ability to obtain regulatory approval and commercialize.

For our ongoing clinical trials of KTE-C19 and in our planned sponsored multicenter clinical trials of KTE-C19 and other product candidates, we have and expect to contract with academic medical centers and hospitals experienced in the assessment and management of toxicities arising during clinical trials. Nonetheless, these centers and hospitals may have difficulty observing patients and treating toxicities, which may be more challenging due to personnel changes, inexperience, shift changes, house staff coverage or related issues. This could lead to more severe or prolonged toxicities or even patient deaths, which could result in us or the FDA delaying, suspending or terminating one or more of our clinical trials, and which could jeopardize regulatory approval. We also expect the centers using KTE-C19, if approved, on a commercial basis could similarly have difficulty in managing adverse events. Medicines used at centers to help manage adverse side effects of KTE-C19, such as tocilizumab and corticosteroids, may not adequately control the side effects and/or may have a detrimental impact on the efficacy of the treatment. Use of these medicines may increase with new physicians and centers administering our product candidates.

If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion. The enrollment of patients depends on many factors, including:

- the patient eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial's primary endpoints;
- the proximity of patients to study sites;
- the design of the trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the trials before the manufacturing and infusion of our product candidates or trial completion.

In addition, our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, some of our clinical trial sites are also being used by some of our competitors, which may reduce the number of patients who are available for our clinical trials in such clinical trial site. Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy and hematopoietic cell transplantation, rather than enroll patients in any future clinical trial.

Delays in patient enrollment may result in increased costs or may affect the timing or outcome of our ongoing clinical trial and planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our product candidates.

Clinical trials are expensive, time-consuming and difficult to design and implement.

Human clinical trials are expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. Because our product candidates are based on new technology and engineered on a patient-by-patient basis, we expect that they will require extensive research and development and have substantial manufacturing and processing costs. In addition, costs to treat patients with relapsed/refractory cancer and to treat potential side effects that may result from our product candidates can be significant. Accordingly, our clinical trial costs are likely to be significantly higher than for more conventional therapeutic technologies or drug products. In addition, our proposed personalized product candidates involve several complex and costly manufacturing and processing steps, the costs of which will be borne by us.

KTE-C19 has received orphan drug status, but we may be unable to maintain or receive the benefits associated with orphan drug status, including market exclusivity.

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition or for which there is no reasonable expectation that the cost of developing and making available in the United States a drug or biologic for a disease or condition will be recovered from sales in the United States for that drug or biologic. If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full BLA to market the same biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity.

We have received orphan drug status for KTE-C19 for the treatment of DLBCL, PMBCL, ALL, MCL, chronic lymphocytic leukemia, or CLL, and follicular lymphoma, or FL, but exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan designated indication and may be lost if the FDA later determines that the request for designation was materially defective or if we are unable to assure the availability of sufficient quantities of the product to meet the needs of patients with the rare disease or condition. The European Commission has also granted KTE-C19 orphan drug designation for the treatment of DLBCL, PMBCL, ALL, MCL, CLL/small lymphocytic lymphoma, and FL. The designation may provide 10 years of market exclusivity in Europe, but is subject to certain limited exceptions. Even though we have obtained orphan drug designation for KTE-C19 for certain indications, we may be unable to obtain orphan drug designation for our future product candidates and we may not be the first to obtain marketing approval for any particular orphan indication.

KTE-C19 has received breakthrough therapy designation in the United States for the treatment of refractory DLBCL, PMBCL and TFL and was granted access to Priority Medicines regulatory support in the European Union for the treatment of refractory DLBCL, but there can be no assurance that such designations will result in expedited review or approval.

Breakthrough therapy designation is granted by the FDA and is intended to expedite the development and review of products that treat serious or life-threatening conditions. Access to the Priority Medicines, or PRIME, initiative is granted by the European Medicines Agency, or EMA, to support the development and accelerate the review of new therapies to treat patients with unmet medical need.

We have received breakthrough therapy designation for KTE-C19 for the treatment of refractory DLBCL, PMBCL and TFL and received access to PRIME for the treatment of refractory DLBCL, but there can be no assurance that such designations will result in expedited review or approval. The FDA may also rescind the breakthrough therapy designation for KTE-C19 if subsequent data no longer support the designation. Breakthrough therapy designation and access to PRIME does not change the standards for product approval. While we intend to seek breakthrough therapy designation and access to PRIME for other product candidates, we may never receive such designations.

Our product candidates may not achieve commercialization and our commercial opportunity may be limited.

In addition to KTE-C19, we have developed a broad pipeline of product candidates, including additional TCR- and CAR-based product candidates. However, further development and obtaining regulatory approval for

and commercializing additional product candidates will require substantial additional funding and are prone to the risks of failure inherent in medical product

development. We cannot provide you any assurance that we will be able to successfully advance any of these additional product candidates through the development process.

Even if we receive FDA approval to market additional product candidates for the treatment of cancer, 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 will be limited. Moreover, a failure in obtaining regulatory approval of additional product candidates may have a negative effect on the approval process of any other, or result in losing approval of any approved, product candidate.

We operate our own clinical manufacturing facility and intend to operate our own commercial manufacturing facility, which will require significant resources and we may fail to successfully operate either or both facilities, which could adversely affect our clinical trials and the commercial viability of our product candidates.

We have not yet manufactured our product candidates on a commercial scale, and may not be able to achieve commercial manufacturing and cell processing on our own, including on a patient-by-patient basis, to satisfy demands for any of our product candidates. While we believe the manufacturing and processing approaches are appropriate to support our clinical product development, we have limited experience in managing the T cell engineering process, and our processes may be more difficult or more expensive than the approaches taken by our competitors. We cannot be sure that the manufacturing processes employed by us will result in T cells that will be safe and effective, or have the same clinical properties as those used in any NCI-based T cell therapy.

We have leased approximately 18,000 square feet near our headquarters in Santa Monica, California, which we use as our primary clinical manufacturing facility and have also leased approximately 43,500 square feet in El Segundo, California to develop our commercial manufacturing facility. We are currently operating our clinical manufacturing facility, but our operations remain subject to review and oversight by the FDA and the FDA could object to our use of our clinical manufacturing facility. While we have completed construction of our commercial manufacturing facility, we must receive approval from the FDA prior to licensure to manufacture our product candidates, which we may never obtain. Even if approved, we would be subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Administration and corresponding state agencies to ensure strict compliance with current good manufacturing practices, or cGMPs, and other government regulations. Our license to manufacture product candidates will be subject to continued regulatory review.

Our cost of goods development is at an early stage. The actual cost to manufacture and process our product candidates could be greater than we expect and could materially and adversely affect the commercial viability of our product candidates.

The manufacture of medical products is complex and requires significant expertise, including the development of advanced manufacturing techniques and process controls. Manufacturers of cell therapy products often encounter difficulties in production, particularly in scaling out and validating initial production and ensuring the absence of contamination. These problems include difficulties with production costs and yields, quality control, including stability of the product, quality assurance testing, operator error, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. Furthermore, if contaminants are discovered in our supply of product candidates or in the manufacturing facilities, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination. We cannot assure you that any stability or other issues relating to the manufacture of our product candidates will not occur in the future.

We may fail to manage the logistics of collecting and shipping patient material to the manufacturing site and shipping the product candidate back to the patient. Logistical and shipment delays and problems caused by us, our vendors or other factors not in our control, such as weather, could prevent or delay the delivery of product candidates to patients. Additionally, we have to maintain a complex chain of identity and chain of custody with respect to patient material as it moves to the manufacturing facility, through the manufacturing process, and back to the patient. Failure to maintain chain of identity and chain of custody could result in patient death, loss of product or regulatory action.

We may also experience manufacturing difficulties due to resource constraints or as a result of labor disputes. If we were to encounter any of these difficulties, our ability to provide our product candidates to patients would be jeopardized.

We are partly reliant on the National Cancer Institute for research and development and early clinical testing of certain of our product candidates.

A portion of our research and development has been conducted by the NCI under the CRADA entered into in August 2012. In January 2016 and June 2016, we entered into additional CRADAs for the research and clinical development of additional engineered T cell therapies, including a fully human CAR-based therapy directed against the CD19 antigen for the treatment of B cell lymphomas and leukemias and TCR-based therapies directed against the HPV-16 E7 oncoprotein and in combination with a checkpoint inhibitor in HPV-16 associated solid tumors.

The NCI, with Dr. Steven A. Rosenberg as the principal investigator, is responsible for conducting multiple clinical trials of engineered T cell therapy targeting various antigens in small numbers of patients under the 2012 CRADA. In April 2016, the National Institutes of Health, or NIH, announced that it had initiated an evaluation of all of its facilities producing sterile or infused products for administration to research participants. Preliminary findings identified the NCI cell therapy laboratory that makes products for the clinical trials under the 2012 CRADA as not in compliance with quality and safety standards, and not suitable for the production of sterile or infused products. According to the NIH, there is no evidence that any patients have been harmed, but a rigorous clinical review is being undertaken. While the NCI has begun the screening and enrollment of new patients in affected trials, we are unable to estimate the timing of any complete resolution.

While we expect to have the NCI, with Drs. James N. Kochenderfer and Christian Hinrichs as principal investigators, conduct additional clinical trials under the 2016 CRADAs that are unaffected by the NIH facility evaluation, we have limited control over the nature or timing of the NCI's clinical trials and limited visibility into their day-to-day activities, including with respect to how they are providing and administering T cell therapy. For example, the research we are funding constitutes only a small portion of the NCI's overall research. Additionally, other research being conducted by Dr. Rosenberg, Dr. Kochenderfer or Dr. Hinrichs may at times receive higher priority than research on our programs.

We are dependent on the NIH for licensing intellectual property rights to certain future product candidates.

Under each CRADA, we have an exclusive option to negotiate commercial licenses from the NIH to intellectual property relating to CAR- and TCR-based product candidates developed in the course of the CRADA research plan. However, we would have to negotiate with the NIH for such a license. There can be no assurance that we would be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire. Further, to the extent we would like to negotiate a license to a patent filed before the relevant CRADA was entered into, another party may object to the NIH granting us a license during a 15-day public notification period, and the NIH may decide not to grant us the license.

Though each CRADA has a five-year term, the NIH review of NCI manufacturing facilities has not reached a final resolution and the NCI may unilaterally terminate any of the CRADAs at any time for any reason or for no reason upon at least 60 days prior written notice. If the NCI unilaterally terminates one or both CRADAs, part or all of the research and development of engineered autologous cell therapy would be suspended, and we may be unable to research, develop and license future product candidates.

A variety of risks associated with conducting research and clinical trials abroad and marketing our product candidates internationally could materially adversely affect our business.

We plan to initiate a clinical program for KTE-C19 in Europe in the first half of 2017 and ultimately seek regulatory approval of our product candidates outside of the United States. Accordingly, we expect that we will be subject to additional risks related to operating in foreign countries, including:

- differing regulatory requirements in foreign countries;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- increased difficulties in managing the logistics and transportation of collecting and shipping patient material to a manufacturing site in the United States and shipping the product candidate back to the patient abroad;
- import and export requirements and restrictions;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;

- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- difficulties staffing and managing foreign operations;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- differing payor reimbursement regimes, governmental payors or patient self-pay systems, and price controls;

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- potential liability under the Foreign Corrupt Practices Act of 1977 or comparable foreign regulations;
- challenges enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geo-political actions, including war and terrorism.

These and other risks associated with our international operations, including the operations of our European subsidiary, Kite Pharma EU B.V. and of our joint venture in China with Shanghai Fosun Pharmaceutical Industrial Development Co., Ltd., or Fosun Pharma, may materially adversely affect our ability to attain or maintain profitable operations.

We face significant competition from other biotechnology and pharmaceutical companies, and our operating results will suffer if we fail to compete effectively.

The biopharmaceutical industry is characterized by intense competition and rapid innovation. Our competitors may be able to develop other compounds or drugs that are able to achieve similar or better results. Our potential competitors include major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies and universities and other research institutions. Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff and experienced marketing and manufacturing organizations and well-established sales forces. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors, either alone or with collaborative partners, may succeed in developing, acquiring or licensing on an exclusive basis drug or biologic products that are more effective, safer, more easily commercialized or less costly than our product candidates or may develop proprietary technologies or secure patent protection that we may need for the development of our technologies and products. We believe the key competitive factors that will affect the development and commercial success of our product candidates are efficacy, safety, tolerability, reliability, convenience of use, price and reimbursement.

Specifically, engineered T cells faces significant competition in both the CAR and TCR technology space from multiple companies. Even if we obtain regulatory approval of our product candidates, the availability and price of our competitors' products could limit the demand and the price we are able to charge for our product candidates. We may not be able to implement our business plan if the acceptance of our product candidates is inhibited by price competition or the reluctance of physicians to switch from existing methods of treatment to our product candidates, or if physicians switch to other new drug or biologic products or choose to reserve our product candidates for use in limited circumstances. For additional information regarding our competition, see "Item 1. Business-Competition."

We are highly dependent on our key personnel, and if we are not successful in attracting 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 and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our management, scientific and medical personnel, including our President and Chief Executive Officer, our Executive Vice President of Research & Development and Chief Medical Officer, our Chief Operating Officer, our Chief Commercial Officer, our Executive Vice President of Technical Operations and our Chief Financial Officer. The loss of the services of any of our executive officers, other key employees, and other scientific and medical advisors, and our inability to find suitable replacements could result in delays in product development and harm our business. Our strong relationship with the NCI is bolstered by our President and Chief Executive Officer's relationship with Dr. Rosenberg of the NCI. If we lose our President and Chief Executive Officer or if Dr. Rosenberg leaves the NCI, our relationship with the NCI may deteriorate and our business could be harmed. We conduct substantially all of our operations at our facilities in Southern California. This region is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all.

To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have provided stock options and restricted stock units, or RSUs, that vest over time. The value to employees of stock options or RSUs 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. Despite our efforts to retain valuable employees,

members of our management, scientific and development teams may terminate their employment with us on short notice. Although we have employment agreements with our key employees, these employment agreements 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 these individuals or the lives of any of our other employees. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel.

We have grown rapidly and will need to continue to grow the size of our organization, and we may experience difficulties in managing this growth.

As our development and commercialization plans and strategies develop, and as we continue to transition into operating as a public company, we have rapidly expanded our employee base and expect to continue to add managerial, operational, sales, research and development, marketing, financial and other personnel. Current and future growth imposes 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 and FDA 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 our product candidates will depend, in part, on our ability to effectively manage our 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, including substantial aspects of regulatory approval, clinical management, manufacturing and preparation for potential commercial launch. There can be no assurance 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 regulatory approval of our product candidates or otherwise advance our business. There can be no assurance 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 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 our product candidates and, accordingly, may not achieve our research, development and commercialization goals.

We may form or seek strategic alliances or enter into additional licensing arrangements in the future, and we may not realize the benefits of such alliances or licensing arrangements.

We may form or seek strategic alliances, create joint ventures or collaborations or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop. Any of these relationships may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue securities that dilute our existing stockholders or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. Any delays in entering into new strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies for certain indications, which would harm our business prospects, financial condition and results of operations.

If we license products or businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. For instance, our research collaboration with Amgen Inc., our collaboration with bluebird bio, Inc., our license and research agreement with Alpine Immune Sciences, Inc. and our research collaboration and license agreement with Cell Design Labs, Inc. all require significant research and

development commitments that may not result in the development and commercialization of additional product candidates. In addition, our collaboration with GE Global Research may not result in automation technologies that improve engineered T cell manufacturing. We cannot be certain that, following a strategic transaction or license, we will achieve the results, revenue or specific net income that justifies such transaction.

We may not realize the benefits of acquisitions or other strategic transactions.

We acquired T-Cell Factory B.V., or TCF, on March 17, 2015 and renamed the acquired company Kite Pharma EU B.V. On January 10, 2017, KP EU C.V., our wholly owned indirect subsidiary, entered into a cooperative joint venture agreement with Fosun Pharma for the purpose of developing, manufacturing and commercializing KTE-C19 in the mainland of the People's Republic of China, the Hong Kong Special Administration Region and the Macau Special Administration Region. On January 5, 2017, Kite Pharma EU B.V. entered into a Collaboration and License Agreement with Daiichi Sankyo Company, Limited, or Daiichi Sankyo, pursuant to which we have granted to Daiichi Sankyo an exclusive license to develop and commercialize KTE-C19 in Japan.

We actively evaluate various strategic transactions on an ongoing basis. We may acquire other businesses, products or technologies as well as pursue joint ventures or investments in complementary businesses. The success of our strategic transactions, including our acquisition of TCF and partnerships with Fosun Pharma and Daiichi Sankyo, and any future strategic transactions depends on the risks and uncertainties involved including:

- unanticipated liabilities related to acquired companies or joint ventures;
- difficulties integrating acquired personnel, technologies and operations into our existing business;
- retention of key employees;
- diversion of management time and focus from operating our business to management of strategic alliances or joint ventures or acquisition integration challenges;
- increases in our expenses and reductions in our cash available for operations and other uses;
- disruption in our relationships with collaborators or suppliers as a result of such a transaction; and
- possible write-offs or impairment charges relating to acquired businesses or joint ventures.

If any of these risks or uncertainties occur, we may not realize the anticipated benefit of any acquisition or strategic transaction. For example, TCF's TCR-GENERator technology platform may fail to identify TCR-based product candidates that are safe and effective, or at all. Additionally, foreign acquisitions and joint ventures are subject to additional risks, including those related to integration of operations across different cultures and languages, currency risks, potentially adverse tax consequences of overseas operations and the particular economic, political and regulatory risks associated with specific countries. For instance, we owe significant milestone payments to the sellers of TCF in euros, rather than dollars, and we have not hedged these payments.

In addition, our joint venture with Fosun Pharma may never be approved by the China regulatory authorities and any payments due to us from the joint venture may be restricted due to governmental or other regulatory controls. We may also face difficulties or be unable to successfully transfer our manufacturing process to China and Japan, which would prevent any development or commercialization of KTE-C19 in China and Japan.

Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses or write-offs of goodwill, any of which could harm our financial condition.

If we fail to obtain additional financing, we may be unable to complete the development and commercialization of our product candidates.

Our operations have consumed substantial amounts of cash since inception. We expect to continue to spend substantial amounts to continue the clinical development of our product candidates, including KTE-C19. If approved, we will require significant additional amounts in order to launch and commercialize our product candidates.

Changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. We may require additional capital for the further development and commercialization of our product candidates, including funding our internal manufacturing capabilities and Kite Pharma EU B.V. or

our joint venture with Fosun Pharma and may need to raise additional funds sooner if we choose to expand more rapidly than we presently anticipate.

We cannot be certain that additional funding will be available on acceptable terms, or at all. We have no committed source of additional capital and if we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back or discontinue the development or commercialization of our product candidates or other research and development initiatives. Our license agreements and CRADAs may also be terminated if we are unable to meet the payment obligations under the agreements. We could be required to seek collaborators for our product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available or relinquish or license on unfavorable terms our rights to our product candidates in markets where we otherwise would seek to pursue development or commercialization ourselves.

Any of the above events could significantly harm our business, prospects, financial condition and results of operations and cause the price of our common stock to decline.

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

We may seek additional capital through a combination of public and private equity offerings, debt financings, strategic partnerships and alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms may include liquidation or other preferences that adversely affect your rights as a stockholder. The incurrence of indebtedness would result in increased fixed payment obligations and could involve certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we raise additional funds through strategic partnerships and alliances and licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies or product candidates, or grant licenses on terms unfavorable to us.

Our internal computer systems, or those used by our CROs or other contractors or consultants, may fail or suffer security breaches.

Despite the implementation of security measures, our internal computer systems, our Kite Konnect technology platform and the systems of our CROs, contractors and consultants are vulnerable to damage from computer viruses and unauthorized access. While we have not experienced any such material system failure or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. A failure in the Kite Konnect platform, or any of the associated IT platform solutions, could also result in the loss of product or regulatory action. Likewise, we partly rely on NCI for research and development of our product candidates and other third parties to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. 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 confidential or proprietary information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations, and those of our CROs and other contractors and consultants, could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. In addition, we are reliant on the NCI for conducting research and development of certain of our product candidates. The NCI has been affected by the NIH evaluation of its manufacturing facilities, which is delaying clinical trials of early-stage product candidates under our 2012 CRADA, and the NCI may be further affected by government shutdowns or withdrawn funding.

Our ability to manufacture our product candidates could be disrupted if our operations or those of our suppliers are affected by a man-made or natural disaster or other business interruption. Our corporate headquarters, the location of our manufacturer of the viral vector that delivers the CAR gene, and our clinical and commercial manufacturing facilities are located in California near major earthquake faults and fire zones. The ultimate impact on us, our significant suppliers and our general infrastructure of being located near major earthquake faults and fire zones and being consolidated in certain geographical areas is

unknown, but our operations and financial condition could suffer in the event of a major earthquake, fire or other natural disaster.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, or our business may be found to be not compliant with regulatory standards requirements.

We are exposed to the risk of employee fraud or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to: comply with the laws of the FDA and other similar foreign regulatory bodies, provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies, comply with manufacturing standards we have established, comply with healthcare fraud and abuse laws in the United States and similar foreign fraudulent misconduct laws, or report financial information or data accurately or to disclose unauthorized activities to us. Similarly, our business could be found to be noncompliant with healthcare regulatory requirements. If we obtain FDA approval of any of our product candidates and begin commercializing those products in the United States, our potential exposure under such laws will increase significantly, and our costs associated with compliance with such laws are also likely to increase. These laws may impact, among other things, our current activities with principal investigators and research patients, as well as proposed and future sales, marketing and education programs. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain business arrangements in the healthcare industry, are subject to extensive laws designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, structuring and commission(s), certain customer incentive programs and other business arrangements generally. Activities subject to these laws also involve the improper use of information obtained in the course of patient recruitment for clinical trials. The healthcare laws and regulations that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which 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, the purchasing, leasing, ordering or arranging for the purchase, lease, or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, including the federal civil False Claims Act, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid, or other federal government programs that are false or fraudulent or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up by any trick, scheme or device, a material fact or making any materially false, fictitious or fraudulent statements in connection with the delivery of, or payment for, healthcare benefits, items or services;
- HIPAA, as amended by HITECH and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization;
- the federal Physician Payment Sunshine Act, created under the Patient Protection and Affordable Care Act, as amended by the Health Care Education Reconciliation Act, which we refer to collectively as the Affordable Care Act, and its implementing regulations, which require certain manufacturers of drugs, devices, biologicals and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services' Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers.

Additionally, we may be subject to state and foreign equivalents of each of the healthcare laws described above, among others, some of which may be broader in scope. For example, we may be subject to the following: state anti-kickback and false claims laws that may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the

federal government; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

We have adopted a code of business conduct and ethics, but it is not always possible to identify and deter employee misconduct or business noncompliance, and the precautions we take to detect and prevent inappropriate conduct 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. Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any of our product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

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

We face an inherent risk of product liability as a result of the clinical testing of our product candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if our product candidates cause or are perceived to cause injury or are 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. If we cannot successfully defend ourselves against product liability claims, we may 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 the merits or eventual outcome, liability claims may result in:

- decreased demand for our product candidates;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize any product candidate; and
- a decline in our share price.

Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop, alone or with corporate collaborators. Our insurance policies may also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. While we have obtained clinical trial insurance for our clinical trials of KTE-C19, we may have to pay amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Even if our agreements with any future corporate collaborators entitle us to indemnification against losses, such indemnification may not be available or adequate should any claim arise.

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

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change” (generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period), the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income may be limited. As of December 31, 2016, we have U.S. and state net operating loss carryforwards of approximately \$167.5 million and \$468.6 million, respectively. As a result of our private placements and our initial public offering, we triggered two “ownership changes,” which resulted in a limitation in utilization of pre-change attributes. We may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership. Accordingly, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal and state taxable income may be subject to limitations, which will result in increased future tax liability to us.

Unstable market and economic conditions may have serious adverse consequences on our business, financial condition and stock price.

As widely reported, global credit and financial markets have experienced extreme volatility and disruptions in the past several years, including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, or do not improve, it may make any necessary debt or equity financing more difficult, more costly, and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive these difficult economic times, which could directly affect our ability to attain our operating goals on schedule and on budget.

At December 31, 2016, we had approximately \$114.6 million of cash and cash equivalents and \$299.9 million of marketable securities. While we are not aware of any downgrades, material losses or other significant deterioration in the fair value of our cash equivalents and marketable securities since December 31, 2016, no assurance can be given that further deterioration of the global credit and financial markets would not negatively impact our current portfolio of cash equivalents and marketable securities 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 the general economic downturn.

Risks Related to Our Reliance on Third Parties

We are partly relying on third parties to assist in preparing for commercial launch and to commercialize KTE-C19, if approved.

We are partly relying on key collaborators to prepare for commercial launch and for the successful marketing and delivery of KTE-C19, if approved. In particular, we are relying on technology partners to assist in the development of the Kite Konnect technology platform. This platform is critical to ensure positive prescriber and patient experience as well as chain of identity and chain of custody of the product. If the technology platform is incomplete or develops technological issues, we may be unable to launch KTE-C19 or have to suspend sales post-launch.

In addition, we expect to rely on apheresis sites, shippers, couriers, and hospitals for the logistical collection of patient white blood cells and ultimate delivery of KTE-C19 to patients. Any disruption or difficulties incurred by any of these vendors could result in product loss and regulatory action and significantly harm our business.

We rely and will rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval of or commercialize our product candidates.

We depend and will depend upon independent investigators and collaborators, such as universities, medical institutions, CROs and strategic partners to conduct our preclinical and clinical trials under agreements with us, including without limitation the NCI. We negotiate budgets and contracts with CROs and study sites, which may result in delays to our development timelines and increased costs. We will rely heavily on these third parties over the course of our clinical trials, and we control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with current

good clinical practices, or cGCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for product candidates in clinical development. Regulatory authorities enforce these cGCPs through periodic inspections of trial sponsors, principal

investigators and trial sites. If we or any of these third parties fail to comply with applicable cGCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, such regulatory authorities will determine that any of our clinical trials comply with the cGCP regulations. In addition, our clinical trials must be conducted with biologic product produced under cGMPs and will require a large number of test patients. Our failure or any failure by these third parties to comply with these regulations or to recruit a sufficient number of patients may require us to repeat clinical trials, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

Any third parties conducting our clinical trials are and will not be 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 preclinical, clinical and nonclinical programs. These third parties may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies or other drug development activities, which could affect their performance on our behalf. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to complete development of, obtain regulatory approval of or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenue could be delayed.

Switching or adding third parties to conduct our clinical trials involves substantial cost and requires extensive management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines.

We may rely on third parties to manufacture our clinical product supplies, and we may have to rely on third parties to produce and process our product candidates, if approved.

If we are unable to develop or obtain regulatory approval of our own commercial manufacturing facility for any commercial product supplies or engage any future third-party manufacturer, we are exposed to the following risks:

- We may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA may have questions regarding any replacement contractor. This may require new testing and regulatory interactions. In addition, a new manufacturer would have to be educated in, or develop substantially equivalent processes for, production of our products after receipt of FDA questions, if any.
- Our third-party manufacturers might be unable to timely formulate and manufacture our product or produce the quantity and quality required to meet our clinical and commercial needs, if any.
- Contract manufacturers may not be able to execute our manufacturing procedures appropriately.
- Our future contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our products.
- Manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Administration and corresponding state agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards.
- We may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our products.
- Our third-party manufacturers could breach or terminate their agreement with us.

Our contract manufacturers would also be subject to the same risks we face in developing our own manufacturing capabilities, as described above. Each of these risks could delay our clinical trials, the approval, if any of our product candidates by the FDA or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenue. In addition, we will rely on third parties to perform release tests on our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm. We also plan

to rely on a contract manufacturer to assist with part of the manufacturing process for our clinical trials in Europe and any non-performance by such manufacturer will adversely affect our clinical trials in Europe.

Cell-based therapies rely on the availability of specialty raw materials, which may not be available to us on acceptable terms or at all.

Our product candidates require many specialty raw materials, including viral vectors that deliver the CAR or TCR sequence, some of which are manufactured by small companies with limited resources and experience to support a commercial product, and the suppliers may not be able to deliver raw materials to our specifications. In addition, those suppliers normally support blood-based hospital businesses and generally do not have the capacity to support commercial products manufactured under cGMP by biopharmaceutical firms. The suppliers may be ill-equipped to support our needs, especially in non-routine circumstances like an FDA inspection or medical crisis, such as widespread contamination. We also do not have contracts with many of these suppliers, and may not be able to contract with them on acceptable terms or at all. Accordingly, we may experience delays in receiving key raw materials to support clinical or commercial manufacturing.

In addition, some raw materials are currently available from a single supplier, or a small number of suppliers. We cannot be sure that these suppliers will remain in business, or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purpose.

If we or our third-party suppliers use hazardous and biological materials in a manner that causes injury or violates applicable law, we may be liable for damages.

Our research and development activities involve the controlled use of potentially hazardous substances, including chemical and biological materials. We and our suppliers are subject to federal, state and local laws and regulations in the United States governing the use, manufacture, storage, handling and disposal of medical and hazardous materials. Although we believe that we and our suppliers' procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we and our suppliers cannot completely eliminate the risk of contamination or injury resulting from medical or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical or hazardous materials. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development and production efforts, which could harm our business, prospects, financial condition or results of operations.

Risks Related to Government Regulation

The FDA regulatory approval process is lengthy and time-consuming, and we may experience significant delays in the clinical development and regulatory approval of our product candidates.

We have not previously submitted a BLA to the FDA, or similar approval filings to comparable foreign authorities. A BLA must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety and effectiveness for each desired indication. The BLA must also include significant information regarding the chemistry, manufacturing and controls for the product, including with respect to chain of identity and chain of custody of the product. In December 2016, we initiated a rolling submission of the BLA for accelerated approval of KTE-C19 as a treatment for patients with relapsed or refractory aggressive NHL, who are ineligible for ASCT. A rolling submission allows a company to submit portions of the marketing application to the FDA as they are completed. We plan to complete the submission by the end of the first quarter of 2017, however we may be unable to submit on time if we cannot complete the information requirements for the BLA.

We expect the novel nature of our product candidates to create further challenges in obtaining regulatory approval. For example, the FDA has limited experience with commercial development of T cell therapies for cancer. We also intend to obtain regulatory approval of future TCR-based product candidates regardless of cancer type or origin, which the FDA may have difficulty accepting if our clinical trials only involved cancers of certain origins. Accordingly, the regulatory approval pathway for our product candidates may be uncertain, complex, expensive and lengthy, and approval may not be obtained.

We may also experience delays in completing planned clinical trials for a variety of reasons, including delays related to:

- the availability of financial resources to commence and complete the planned trials;
- reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining approval at each clinical trial site by an independent institutional review board, or IRB;

- recruiting suitable patients to participate in a trial;
- having patients complete a trial, including having patients enrolled in clinical trials dropping out of the trial before the product candidate is manufactured and returned to the site, or return for post-treatment follow-up;
- clinical trial sites deviating from trial protocol or dropping out of a trial;

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- adding new clinical trial sites; or
- manufacturing sufficient quantities of qualified materials under cGMPs and applying them on a patient by patient basis for use in clinical trials.

We could also encounter delays if physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our product candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles. Further, a clinical trial may be suspended or terminated by us, the IRBs for the institutions in which such trials are being conducted, the Data Monitoring Committee for such trial, or by the FDA or other regulatory authorities due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a product candidate, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. The FDA's review of our data of our ongoing clinical trials of KTE-C19 may, depending on the data, also result in the delay, suspension or termination of one or more clinical trials of KTE-C19, which would also delay or prevent the initiation of our other planned clinical trials. If we experience termination of, or delays in the completion of, any clinical trial of our product candidates, the commercial prospects for our product candidates will be harmed, and our ability to generate product revenue will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product development and approval process and jeopardize our ability to commence product sales and generate revenue. The NCI is also experiencing difficulties in completing ongoing clinical trials and conducting future clinical trials of product candidates due to the NIH facility evaluation.

Many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may ultimately lead to the denial of regulatory approval of our product candidates.

The FDA may disagree with our regulatory plan and we may fail to obtain regulatory approval of our product candidates.

While we believe the primary analysis supports our BLA submission for accelerated approval of KTE-C19, the FDA may disagree or the FDA could require longer-term follow-up results, additional data from our clinical trial or additional information relating to GMP compliance and chain of identity and chain of custody that could delay or prevent FDA's filing or approval of our first BLA submission. FDA refusal to file our BLA would delay resubmission and harm our business. Even if filed by the FDA, the FDA may issue a complete response letter on the basis that the benefits of KTE-C19 do not outweigh its risks, or if there are data integrity or GMP compliance concerns. The FDA may also convene a public advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved. If an advisory committee were to recommend against the approval of our BLA, we may not be able to succeed in securing approval for KTE-C19. The FDA is not bound by the recommendation of an advisory committee.

In addition, the general approach for FDA approval of a new biologic or drug is dispositive data from two well-controlled, Phase 3 clinical studies of the relevant biologic or drug in the relevant patient population. Phase 3 clinical studies typically involve hundreds of patients, have significant costs and take years to complete. We believe our accelerated approval strategy is warranted given the limited alternatives for patients with aggressive NHL, but the FDA may ultimately require a Phase 3 clinical trial prior to approval, particularly since our product candidates represent a novel and personalized treatment. In addition, the standard of care may change with the approval of new products in the same indications that we are studying. This may result in the FDA or other regulatory agencies requesting additional studies to show that our product candidate is superior to the new products.

Our clinical trial results may also not support approval. In addition, our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our product candidates are safe and effective for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval, including due to the heterogeneity of patient populations;
- we may be unable to demonstrate that our product candidates' clinical and other benefits outweigh their safety risks;

- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;

- 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 will inspect our commercial manufacturing facility and may not approve our facility; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants marketing approval of a product candidate, comparable regulatory authorities in foreign jurisdictions 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 studies 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.

We may also submit marketing applications in other countries. 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 regulatory 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 our product candidates will be harmed.

Even if we receive regulatory approval of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

Any regulatory approvals that we receive for our product candidates will require surveillance to monitor the safety and efficacy of the product candidate. The FDA may also require a risk evaluation and mitigation strategy in order to approve our product candidates, which could entail requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our product candidates will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and cGCPs for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with our product candidates, including adverse events of unanticipated severity or frequency, or with our third-party suppliers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our product candidates, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of license approvals;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot

predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are

not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

In addition, if we were able to obtain accelerated approval of KTE-C19, the FDA would require us to conduct a confirmatory study to verify the predicted clinical benefit and additional safety studies. The results from the confirmatory study may not support the clinical benefit, which would result in the approval being withdrawn.

Coverage and reimbursement may be limited or unavailable in certain market segments for our product candidates, which could make it difficult for us to sell our product candidates, if approved, profitably.

Successful sales of our product candidates, if approved, depend on the availability of coverage and adequate reimbursement from third-party payors. In addition, because our product candidates represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenue from our product candidates.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Obtaining coverage and adequate reimbursement from governmental healthcare programs, such as Medicare and Medicaid, and commercial payors is critical to new product acceptance.

Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs and treatments they will cover and the amount of reimbursement. Reimbursement by a third-party payor may depend upon a number of factors, including, but not limited to, the third-party payor's determination that use of a product is:

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

Obtaining coverage and reimbursement approval of a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. Even if we obtain coverage for a given product, if the resulting reimbursement rates are deemed to be insufficient, hospitals may not approve our product for use in their facility or may require co-payments that patients find unacceptably high. Patients are unlikely to use our product candidates unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our product candidates.

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. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained.

We intend to seek approval to market our product candidates in both the United States and in selected foreign jurisdictions. If we obtain approval in one or more foreign jurisdictions for our product candidates, we will be subject to rules and regulations in those jurisdictions. In some foreign countries, particularly those in Europe, the pricing of biologics is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after obtaining marketing approval of a product candidate. In addition, market acceptance and sales of our product candidates will depend significantly on the availability of coverage and adequate reimbursement from third-party payors for our product candidates and may be affected by existing and future health care reform measures.

The advancement of health reform may negatively impact our ability to sell our product candidates, if approved, profitably.

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system that could impact our ability to sell our product candidates, if approved, profitably. In particular, in

2010 the Affordable Care Act was enacted. The Affordable Care Act and its implementing regulations, among other things, revised the methodology by which rebates owed by manufacturers to the state and federal government for covered outpatient drugs and certain biologics, including our product candidates, under the Medicaid drug rebate program are calculated, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid drug rebate program, extended the Medicaid drug rebate program to utilization of prescriptions of individuals enrolled in Medicaid

managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, and provided incentives to programs that increase the federal government's comparative effectiveness research. Additionally, the Affordable Care Act expanded eligibility criteria for Medicaid programs, imposed a new Medicare Part D coverage gap discount program, expanded the entities eligible for discounts under the Public Health Service pharmaceutical pricing program, and implemented a new Patient-Centered Outcomes Research Institute. We are still unsure the full impact that the Affordable Care Act will have on our business.

Further, since its enactment, there have been judicial and Congressional challenges to numerous provisions of the Affordable Care Act. In January, Congress voted to adopt a budget resolution for fiscal year 2017, or the Budget Resolution, that authorizes the implementation of legislation that would repeal portions of the Affordable Care Act. The Budget Resolution is not a law, but it is widely viewed as the first step toward the passage of legislation that would repeal certain aspects of the Affordable Care Act. Further, on January 20, 2017, President Trump signed an Executive Order directing federal agencies with authorities and responsibilities under the Affordable Care Act to waive, defer, grant exemptions from, or delay the implementation of any provision of the Affordable Care Act that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. Congress also could consider subsequent legislation to replace elements of the Affordable Care Act that are repealed.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. For example, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed bills designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient assistance programs, and reform government program reimbursement methodologies for drugs. Further, in April 2016, CMS' final rule regarding the Medicaid drug rebate program took effect, among other things, revising the manner in which the "average manufacturer price" is to be calculated by manufacturers participating in the program and implementing certain amendments to the Medicaid rebate statute created under the Affordable Care Act. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

Risks Related to Our Intellectual Property

We depend on intellectual property licensed from third parties and termination of any of these licenses could result in the loss of significant rights, which would harm our business.

We are dependent on patents, know-how and proprietary technology, both our own and licensed from others.

We have several license agreements, including with Cabaret Biotech Ltd., or Cabaret, and Dr. Zelig Eshhar, the NIH, Amgen Inc., Alpine Immune Sciences, Inc., The Regents of the University of California and Cell Design Labs, Inc. These licenses may be terminated upon certain conditions. Any termination of these licenses could result in the loss of significant rights and could harm our ability to commercialize our product candidates. In addition, Cabaret and other of our licensors in-license some of the intellectual property rights they are licensing to us. To the extent these licensors fail to meet their obligations under their license agreements, which we are not in control of, we may lose the benefits of our license agreements with these licensors.

Disputes may also arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;

- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;

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- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

In addition, our subsidiary, Kite Pharma EU B.V., has licenses to certain intellectual property rights relating to its TCR-GENErator platform, and we are subject to the same risks of termination and disputes with respect to our subsidiary's licenses. We are generally also subject to all of the same risks with respect to protection of intellectual property that we license, as we are for intellectual property that we own, which are described below. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize products could suffer.

If our efforts to protect the proprietary nature of the intellectual property related to our technologies are not adequate, we may not be able to compete effectively in our market.

We rely upon a combination of patents, trade secret protection and license agreements to protect the intellectual property related to our technologies. Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding our competitive position in our market.

We primarily rely on our license agreement with Cabaret with respect to CAR-based product candidates generally and KTE-C19 specifically, and rely and expect to rely on license agreements with the NIH for other product candidates. Certain intellectual property which is covered by these agreements has been developed with funding from the U.S. government. As such, our rights in this intellectual property are subject to certain research and other rights of the government.

Additional patent applications have been filed, and we anticipate additional patent applications will be filed, both in the United States and in other countries, as appropriate. However, we cannot predict:

- if and when patents will issue;
- the degree and range of protection any issued patents will afford us against competitors including whether third parties will find ways to invalidate or otherwise circumvent our patents;
- whether or not others will obtain patents claiming aspects similar to those covered by our patents and patent applications; or
- whether we will need to initiate litigation or administrative proceedings which may be costly whether we win or lose.

Composition of matter patents for biological and pharmaceutical products such as CAR- or TCR-based product candidates are generally considered to be the strongest form of intellectual property protection for those types of products, as such patents provide protection without regard to any method of use. We cannot be certain that the claims in our pending patent applications covering composition of matter of our product candidates will be considered patentable by the United States Patent and Trademark Office, or the USPTO, or by patent offices in foreign countries, or that the claims in any of our issued patents will be considered patentable by courts in the United States or foreign countries. Method of use patents protect the use of a product for the specified method. This type of patent does not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products "off-label." Although off-label prescriptions may infringe or contribute to the infringement of method of use patents, the practice is common and such infringement is difficult to prevent or prosecute.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the patentability, validity, enforceability or scope thereof, for example through inter partes review, or IPR, post-grant review or ex parte reexamination before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions, which may result in such patents being cancelled, narrowed, invalidated or held unenforceable. For example, on November 16, 2015, March 18, 2016 and August 5, 2016, one or more anonymous parties filed for ex parte reexaminations of certain patents that we licensed pursuant to our

agreement with Cabaret. On December 12, 2016, we achieved a favorable outcome in one of these reexaminations: the USPTO maintained the patent with its expiration date

unchanged. If, as a result, one or more of the claims in these patents are determined to be unpatentable, invalid or unenforceable, our ability to block certain third party CAR products with these patents could be seriously impaired. Even if our patents and applications are unchallenged, they may not adequately protect our intellectual property or prevent others from designing around our claims. If the breadth or strength of protection provided by the patents and patent applications we hold with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced. United States patent applications containing or that at any time contained a claim not entitled to a priority date before March 16, 2013 are subject to the “first to file” system implemented by the America Invents Act (2011).

This first to file system will require us to be cognizant going forward of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to file any patent application related to our product candidates. Furthermore, for United States applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the USPTO, to determine who was the first to invent any of the subject matter covered by the patent claims of our applications.

In addition to the protection afforded by patents, we seek to rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and any other elements of our product discovery and development processes that involve proprietary know-how, information, or technology that is not covered by patents. Although we require all of our employees to assign their inventions to us, and require all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information, or technology to enter into confidentiality agreements, we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Furthermore, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results and financial condition.

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

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidates. As described in more detail below, we are engaged in litigation in which a third party claims that our lead product candidate, KTE-C19, infringes or will infringe its patent rights.

The patent-in-suit in the litigation in which we are involved is owned by Memorial Sloan Kettering Cancer and Sloan Kettering Institute for Cancer Research, or MSK, and licensed to Juno Therapeutics, Inc., or Juno, and relates to certain CAR compositions of matter. Juno is a publicly held biotherapeutics company developing CAR and TCR technologies. On August 13, 2015, we filed a petition with the USPTO to institute an IPR proceeding of the MSK patent. The purpose of the IPR petition was to seek a determination before the Patent Trial and Appeal Board, or PTAB, that the claims recited in the patent licensed to Juno were invalid. A decision was issued in the IPR on December 16, 2016 wherein the PTAB declined to hold the claims invalid. On February 16, 2017, we filed a Notice of Appeal to the Court of Appeals for the Federal Circuit.

Separately, on December 19, 2016, Juno and MSK filed a patent infringement lawsuit against us in the U.S. District Court for the District of Delaware with respect to the MSK patent. On February 23, 2017, we filed a motion to dismiss this lawsuit based upon lack of subject matter jurisdiction. If we are unsuccessful in our motion to dismiss, we expect the case to proceed. If the motion is successful, MSK may nonetheless bring another lawsuit in the future. Based on the controlling statute, in our defense against the infringement claims we would be precluded, or “estopped” from asserting that the patent at issue is invalid on any ground that we raised or reasonably could have raised during the IPR proceeding. The precise scope of this

statutory estoppel is evolving in the courts, and we are not estopped from raising additional invalidity challenges to the patent, as well as defenses in the lawsuit based on other grounds.

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To have succeeded in the IPR proceeding, we would have needed to establish invalidity of the MSK patent by a “preponderance of the evidence,” meaning that, based on the evidence, it is more likely than not that the claims in the patent are invalid. In contrast, in the separate infringement lawsuit filed against us, we would need to prove invalidity by “clear and convincing evidence,” a heightened standard of proof. In the U.S., issued patents enjoy a presumption of validity in court, but not at the USPTO. If the MSK patent were upheld in the IPR appeal and were held by a court of competent jurisdiction to be not invalid, and that it covers KTE-C19, and if a court were to grant an injunction, Juno and MSK may be able to block our ability to sell the product unless we obtained a license or until such patent expires (which we believe will be in 2024) or is finally determined to be not infringed, unpatentable, invalid or unenforceable. While we believe that we have a meritorious basis for asserting that the MSK patent is invalid, patent litigation is inherently uncertain, and therefore we cannot be certain that we will prevail in these proceedings.

Additionally, there may be third-party patents of which we are currently unaware with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of our product candidates, constructs or molecules used in or formed during the manufacturing process, or any final product itself, the holders of any such patents may be able to block our ability to commercialize the product candidate unless we obtained a license under the applicable patents, or until such patents expire or they are finally determined to be held not infringed, unpatentable, invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the product candidate unless we obtained a license or until such patent expires or is finally determined to be held not infringed, unpatentable, invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business. Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys’ fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. These risks apply to the MSK patent and the related legal proceedings as well as to any other relevant third-party patent. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly.

We may not be successful in obtaining or maintaining necessary rights to product components and processes for our development pipeline through acquisitions and in-licenses.

Presently we have rights to the intellectual property, through licenses from third parties and under patent applications that we own or will own, to develop KTE-C19 and certain other product candidates. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights. For instance, while we have certain intellectual property directed to a CAR-based product candidate that targets the EGFRvIII antigen, we may require an additional license relating to the EGFRvIII scFv target binding site in order to commercialize a CAR-based product candidate that targets the EGFRvIII antigen. In addition, while we have patent rights directed to certain CAR constructs, we do not have, and do not expect to obtain, any intellectual property to broad TCR constructs. Rather, any intellectual property directed to TCR-based product candidates that we may obtain would likely be product and/or construct specific.

Our product candidates may also require specific formulations to work effectively and efficiently and these rights may be held by others. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same

technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies, which may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

For example, for licenses to additional product candidates, we would have to negotiate a license with the NIH or other third parties for the rights to certain patents and patent applications relating to such product candidates. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire.

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

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that one or more of our patents is not valid or is 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 defense proceedings could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure.

Interference proceedings provoked by third parties or brought by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Litigation or interference proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

Obtaining and maintaining our 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.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance 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. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

Issued patents covering our product candidates could be found unpatentable, invalid or unenforceable if challenged in court or the USPTO.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate, as applicable, is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. 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 IPR, ex parte re-examination and post grant review in the United States, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). For example, on November 16, 2015, March 18, 2016 and August 5, 2016, one or more anonymous parties filed for ex parte reexaminations of certain patents that we licensed pursuant to our agreement with Cabaret. On December 12, 2016, Kite achieved a favorable outcome in one of these reexaminations: the USPTO maintained the patent with its expiration date unchanged. Such proceedings could result in revocation, truncation of term, or amendment to our patents in such a way that they no longer cover our product, or competitor product, candidates. The outcome following legal assertions of unpatentability, invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we, our patent counsel and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of unpatentability, invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection could have a material adverse impact on our business.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, 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. For example, in the recent case, *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. While we do not believe that any of the patents owned or licensed by us will be found invalid based on this decision, we cannot predict how future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents.

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

We have limited intellectual property rights outside the United States, and, in particular, our patents directed to CAR constructs licensed from Cabaret do not extend outside of the United States. Filing, prosecuting and defending patents on product candidates in all countries 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 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 their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

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

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed confidential information of these third parties or our employees' former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees.

Risks Related to Our Common Stock

The price of our stock has been and may continue to be highly volatile, and you could lose all or part of your investment.

Prior to our initial public offering in 2014, there was no public market for our common stock. We cannot assure you that an active, liquid trading market for our shares will develop or persist. You may not be able to sell your shares quickly or at a recently reported market price if trading in our common stock is not active. The trading price of our common stock following our initial public offering has been and is likely to continue to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this "Risk Factors" section, these factors include:

- any delay in our regulatory filings for our product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- our failure to commercialize our product candidates;
- the commencement, enrollment or results of our ongoing and planned clinical trials of our product candidates or any future clinical trials we may conduct, or changes in the development status of our product candidates; adverse results or delays in clinical trials;
- our or NCI's decision to initiate a clinical trial, not to initiate a clinical trial or to terminate an existing clinical trial;
- the resolution of the NIH facility evaluation and the ability and timing of the NCI to advance clinical trials under the 2012 CRADA and 2016 CRADAs;
- adverse regulatory decisions, including failure to receive regulatory approval of our product candidates;
- changes in laws or regulations applicable to our products, including but not limited to clinical trial requirements for approvals;
- adverse developments concerning our manufacturers or suppliers;
- our inability to obtain adequate product supply for any approved product or inability to do so at acceptable prices;
- our inability to establish collaborations if needed;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to immuno-oncology or related to the use of our product candidates;
- introduction of new products or services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth of our initial cancer target markets;
- our ability to successfully treat additional types of cancers or at different stages, including the ability of Kite Pharma EU B.V. to discover new TCR-based product candidates;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;

- publication of research reports about us or our industry, or immunotherapy in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;

- changes in accounting practices;
- ineffectiveness of our internal controls;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including patent or stockholder litigation;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and The NASDAQ Global Select Market and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results or financial condition.

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

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.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

As of January 31, 2017, our executive officers, directors, and 10% stockholders beneficially owned approximately 25% of our voting stock, a significant portion of which is beneficially owned by Arie Belldegrun, our President, Chief Executive Officer and Chairman. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

Failure to establish and maintain adequate finance infrastructure and accounting systems and controls could impair our ability to comply with the financial reporting and internal controls requirements for publicly traded companies.

As a public company, we operate in an increasingly demanding regulatory environment, including with respect to more complex accounting rules. Company responsibilities required by the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, include establishing and maintaining corporate oversight and adequate internal control over financial reporting and disclosure controls and procedures. Effective internal controls are necessary for us to produce reliable financial reports and are important to help prevent financial fraud.

Our compliance with Section 404 of the Sarbanes-Oxley Act requires that we incur substantial accounting expense and expend significant management efforts. We complied with Section 404 at December 31, 2015 and 2016 and while our testing did not reveal any material weaknesses in our internal controls, subsequent testing by our independent registered public accounting firm may reveal material weaknesses in our internal controls that we would be required to remediate in a timely manner so as to be able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act each year. If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner each year, we could be subject to sanctions or investigations by the SEC, NASDAQ or other regulatory authorities which would require additional financial and management resources and could adversely affect the market price of our common stock. Furthermore, if we cannot provide reliable financial reports or prevent fraud, our business and results of operations could be harmed and investors could lose confidence in our reported financial information.

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

As a public company, we have incurred and will continue to incur significant legal, accounting and other expenses that we did not incur as a private company. We are subject to the reporting requirements of the

Exchange Act, which requires, 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, as well as rules subsequently adopted by the SEC and The NASDAQ Global Select Market to implement provisions of the Sarbanes-Oxley Act, 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. 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 continue to 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 and results of operations. 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 or increase the prices of our products or services. 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.

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

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

Sales of our common stock by current stockholders may make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate, and make it more difficult for you to sell shares of our common stock.

Certain holders of our securities are entitled to rights with respect to the registration of their shares under the Securities Act. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock.

We have registered on Form S-8 all shares of common stock that are issuable under our 2014 Equity Incentive Plan, as amended, or the EIP. As a consequence, these shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

Actual or potential sales of our common stock by our employees, including our directors and executive officers, pursuant to pre-arranged stock trading plans could cause our stock price to fall or prevent it from increasing for numerous reasons, and actual or potential sales by such persons could be viewed negatively by other investors.

In accordance with the guidelines specified under Rule 10b5-1 of the Exchange Act, and our policies regarding stock transactions, a number of our employees, including certain executive officers, have adopted and may continue to adopt stock trading plans pursuant to which they arrange to sell shares of our common stock from time to time in the future. Generally, sales under such plans by our executive officers require public filings. Actual or potential sales of our common stock by such persons could cause the price of our common stock to fall or prevent it from increasing for numerous reasons. For example, a substantial number of shares of our common stock becoming available (or being perceived to become available) for sale in the public market could cause the market price of our common stock to fall or prevent it from increasing. Also, actual or potential sales by such persons could be viewed negatively by other investors.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to the EIP, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital may be needed in the future to continue our planned operations, including conducting clinical trials, commercialization efforts, expanded research and development activities and costs associated with operating a public company. To raise capital, we may sell common stock, convertible securities or other equity securities in one

or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the holders of our common stock.

Pursuant to the EIP, our management is authorized to grant stock options and other equity awards to our employees, directors and consultants.

The number of shares of our common stock reserved for issuance under our EIP will automatically increase on January 1 of each year continuing through and including January 1, 2024, by 5% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or such lesser number of shares determined by our board of directors. In addition, the number of shares of our common stock reserved for issuance under our 2014 Employee Stock Purchase Plan, or ESPP, will automatically increase on January 1 of each year continuing through and including January 1, 2024, by the lesser of (1) 1% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year, (2) 720,000 shares, or (3) a number determined by our board of directors that is less than (1) and (2). Unless our board of directors elects not to increase the number of shares underlying our EIP and ESPP each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of stockholders be called only by the chairman of the board of directors, the chief executive officer, or by a majority of the total number of authorized directors;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;
- a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue preferred stock on terms determined by the board of directors without stockholder approval and which preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for stockholders or potential acquirors to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

If securities or industry analysts issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if the clinical trials and operating results fail to meet the

expectations of analysts, our stock price would likely decline. If one or more analysts do not initiate coverage of us, cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Santa Monica, California, which consists of a 20,000 square foot facility for clinical manufacturing and processing, research and development and offices. The lease for the facility commenced on June 15, 2013 and has an initial 10-year term expiring on June 15, 2023. We have leased an additional 18,000 square feet near our headquarters in Santa Monica, California, which we also use for clinical manufacturing and processing, research and development and offices. The lease has an initial 10-year term expiring on January 31, 2025. We have leased a commercial manufacturing facility, which consists of approximately 43,500 square feet. The facility is located in El Segundo, which is adjacent to Los Angeles International Airport. The lease has an initial 10-year and seven month term that commenced on January 1, 2016. We anticipate the El Segundo facility will support the potential commercial launch of KTE-C19 in 2017. On July 1, 2016, we entered into a lease agreement to lease approximately 60,000 square feet of primarily office space in El Segundo, which is adjacent to the Company's manufacturing facility. The lease has an initial nine year and six month term commencing on February 1, 2017.

We have leased additional administrative office space in Santa Monica with an initial two year and two month term expiring on August 31, 2017. On November 4, 2016, we entered into a lease agreement to lease approximately 159,310 square feet of primarily office space in Santa Monica to serve as our future headquarters. The lease has an initial term of fifteen years and is expected to commence on August 1, 2017. We believe that our existing facilities are adequate to meet our current needs, and that suitable additional alternative spaces will be available in the future on commercially reasonable terms.

Item 3. Legal Proceedings

Certain of the legal proceedings in which we are involved are discussed in Note 11 to our financial statements appearing elsewhere in our Annual Report and hereby incorporated by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II**Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

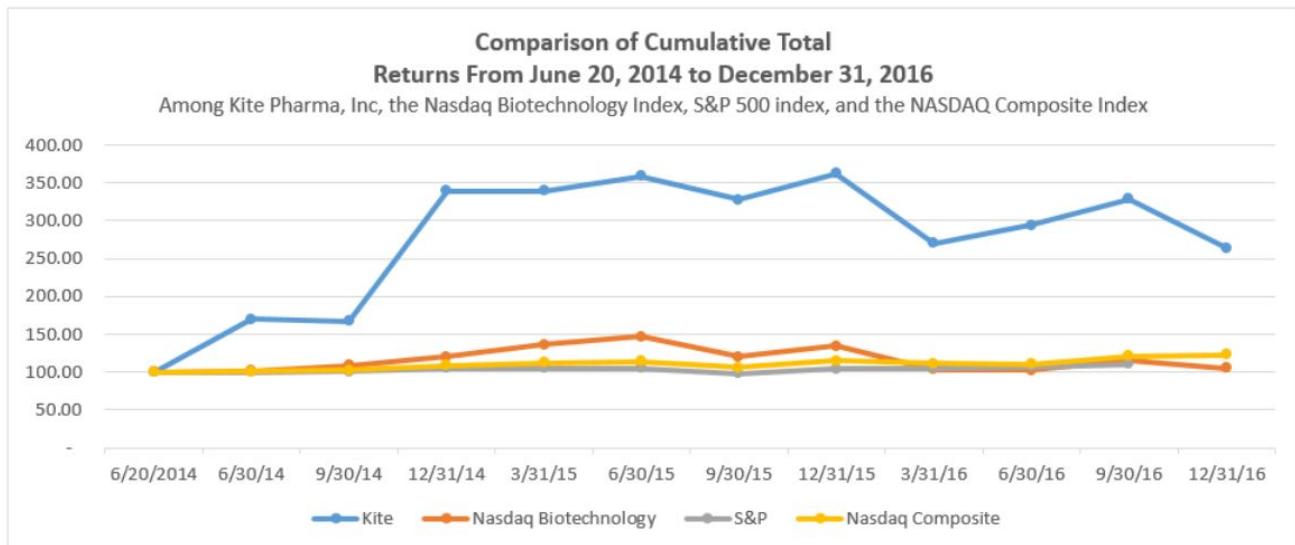
Our common stock has been traded on The NASDAQ Global Select Market since June 20, 2014 under the symbol KITE. Prior to such time, there was no public market for our common stock. The following table sets forth for the periods indicated, the range of high and low quarterly closing sales prices of the common stock as quoted on the NASDAQ Global Select Market:

| | Low | High |
|---------------------|----------|----------|
| 2016: | | |
| Fourth Quarter 2016 | \$ 40.01 | \$ 57.74 |
| Third Quarter 2016 | \$ 46.96 | \$ 62.51 |
| Second Quarter 2016 | \$ 42.07 | \$ 57.42 |
| First Quarter 2016 | \$ 39.95 | \$ 62.31 |
| 2015 | | |
| Fourth Quarter 2015 | \$ 56.99 | \$ 87.00 |
| Third Quarter 2015 | \$ 48.97 | \$ 76.50 |
| Second Quarter 2015 | \$ 46.39 | \$ 65.27 |
| First Quarter 2015 | \$ 57.68 | \$ 87.62 |

Stock Performance Graph

This performance graph shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or incorporated by reference into any of our filings under the Securities Act or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The following graph shows the value of an investment of \$100 from June 20, 2014 (the date our common stock commenced trading on The NASDAQ Global Select Market) through December 31, 2016, in our common stock, the Nasdaq Biotechnology Index, the Standard & Poor's 500 Index (S&P 500), and Nasdaq Composite Index. The historical stock price performance of our common stock shown in the performance graph is not necessarily indicative of future stock price performance.



| | 6/20/2014 (Inception) | 6/30/2014 | 12/31/2014 | 6/30/2015 | 12/31/2015 | 6/30/2016 | 12/31/2016 |
|----------------------|----------------------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|
| Kite Pharma | \$ 100.00 | \$ 170.12 | \$ 339.24 | \$ 358.65 | \$ 362.47 | \$ 294.12 | \$ 263.76 |
| Nasdaq Biotechnology | 100.00 | 102.08 | 120.74 | 146.85 | 134.53 | 102.35 | 105.36 |
| S&P | 100.00 | 99.99 | 105.02 | 105.24 | 104.26 | 107.06 | 114.20 |
| Nasdaq Composite | 100.00 | 100.98 | 108.49 | 114.24 | 114.71 | 110.93 | 123.31 |

Holders

As of February 23, 2017 there were approximately 40 registered holders of record of our common stock.

Dividend Policy

We have not paid any dividends on our common stock since our inception and do not expect to pay dividends on our common stock in the foreseeable future. We currently intend to retain all available funds as well as future earnings, if any, to fund the development and expansion of our operations. Any future determination to pay dividends will be made at the discretion of our board of directors.

Securities Authorized for Issuance under Equity Compensation Plans

Incorporated by reference from the information in our Proxy Statement for our 2017 Annual Meeting of Stockholders, which we will file with the SEC within 120 days of the end of the fiscal year to which this Annual Report relates.

Use of Proceeds from Initial Public Offering of Common Stock

In June 2014, we completed our initial public offering, or IPO, and sold 7,500,000 shares of our common stock at a price of \$17.00 per share. Additionally, the underwriters exercised their option to purchase additional shares for an additional 1,125,000 shares at \$17.00 per share. As a result of our IPO, we raised a total of approximately \$134.1 million in net proceeds after deducting underwriting discounts and commissions of \$10.3 million and offering expenses of \$2.2 million.

As of December 31, 2016, all of the net proceeds from our IPO have been utilized to fund our KTE-C19 clinical program and other programs as well as working capital, including general operating expenses, as further described under the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” appearing elsewhere in this Annual Report.

Purchases of Equity Securities by the Issuer or Affiliated Purchasers

None.

Item 6. Selected Financial Data

We derived the consolidated financial data for the years ended December 31, 2016, 2015 and 2014 and as of December 31, 2016 and 2015 from our audited consolidated financial statements, which are included elsewhere in this Annual Report. We derived the consolidated financial data for the years ended December 31, 2013 and 2012 and as of December 31, 2014, 2013, and 2012 from our audited consolidated financial statements that are not included elsewhere in this Annual Report.

Our historical results are not necessarily indicative of the results that can be expected in the future. The selected historical financial data below should be read in conjunction with the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the financial statements and related notes appearing elsewhere in this Annual Report.

| | YEARS ENDED DECEMBER 31, | | | | |
|---|--------------------------|--------------|-------------|------------|------------|
| | 2016 | 2015 | 2014 | 2013 | 2012 |
| (in thousands, except share and per share amounts) | | | | | |
| Consolidated statements of operations data: | | | | | |
| Revenues | \$ 22,170 | \$ 17,258 | \$ — | \$ — | \$ — |
| Operating expenses: | | | | | |
| Research and development | 197,934 | 76,369 | 23,089 | 5,088 | 1,811 |
| General and administrative | 97,423 | 44,839 | 13,569 | 1,339 | 770 |
| Total operating expenses | 295,357 | 121,208 | 36,658 | 6,427 | 2,581 |
| Loss from operations | (273,187) | (103,950) | (36,658) | (6,427) | (2,581) |
| Other income (expense), net | 3,223 | 2,297 | (5,911) | 61 | 8 |
| Loss before income taxes | (269,964) | (101,653) | (42,569) | (6,366) | (2,573) |
| Benefit from income taxes | 2,894 | — | — | — | — |
| Net loss | \$ (267,070) | \$ (101,653) | \$ (42,569) | \$ (6,366) | \$ (2,573) |
| Net loss attributable to common stockholders | \$ (267,070) | \$ (101,653) | \$ (43,658) | \$ (7,801) | \$ (2,573) |
| Net loss per share attributable to common stockholders-basic and diluted | \$ (5.46) | \$ (2.33) | \$ (1.91) | \$ (1.43) | \$ (0.48) |
| Weighted-average number of common shares used in net loss per share applicable to common stockholders-basic and diluted | 48,940,290 | 43,636,652 | 22,822,204 | 5,473,384 | 5,314,214 |

| | AS OF DECEMBER 31, | | | | |
|---|--------------------|------------|------------|-----------|----------|
| | 2016 | 2015 | 2014 | 2013 | 2012 |
| (in thousands) | | | | | |
| Consolidated balance sheet data: | | | | | |
| Cash, cash equivalents, and marketable securities | \$414,422 | \$ 614,722 | \$ 367,040 | \$ 22,357 | \$ 8,651 |
| Working capital | 372,254 | 594,924 | 361,645 | 21,236 | 8,230 |
| Total assets | 524,304 | 707,963 | 370,753 | 22,982 | 8,893 |
| Preferred stock | — | — | — | 20 | — |
| Common stock and additional paid-in capital | 855,614 | 775,637 | 420,890 | 36,996 | 76 |
| Total stockholders' equity | 427,970 | 615,760 | 362,589 | 21,581 | 7,847 |

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion contains management's discussion and analysis of our financial condition and results of operations and should be read together with "Selected Financial Data" and the historical consolidated financial statements and the notes thereto included in "Financial Statements and Supplementary Data." This discussion contains forward-looking statements that reflect our plans, estimates and beliefs and involve numerous risks and uncertainties, including but not limited to those described in the "Risk Factors" section of this Annual Report. Actual results may differ materially from those contained in any forward-looking statements. You should carefully read "Special Note Regarding Forward-Looking Statements" and "Risk Factors."

Overview

We are a clinical-stage biopharmaceutical company focused on the development and commercialization of novel cancer immunotherapy products designed to harness the power of a patient's own immune system to target and kill cancer cells. We do this using our engineered autologous cell therapy, which we believe is a transformational approach to the treatment of cancer. Our therapy involves the genetic engineering of T cells to express either chimeric antigen receptors, or CARs, or T cell receptors, or TCRs. These modified T cells are designed to recognize and destroy cancer cells.

Our lead product candidate, KTE-C19, is a CAR-based therapy that targets the CD19 antigen, a protein expressed on the cell surface of B-cell lymphomas and leukemias. Since the second half of 2015, we have been conducting a Phase 2 clinical trial (ZUMA-1) of KTE-C19 in patients with relapsed or refractory

aggressive diffuse large B cell lymphoma, or DLBCL, primary mediastinal B cell lymphoma, or PMBCL, or transformed follicular lymphoma, or TFL. DLBCL, PMBCL and TFL are types of aggressive non-Hodgkin lymphoma, or NHL. Based on the results from the primary analysis of ZUMA-1, we plan to submit a

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Biologics License Application, or BLA, in the first quarter of 2017 to the U.S. Food and Drug Administration, or FDA, for the accelerated approval of KTE-C19 for the treatment of patients with relapsed or refractory aggressive NHL, who are ineligible for autologous stem cell transplant. We plan to commercially launch KTE-C19 in 2017, if approved.

We are conducting other clinical studies of KTE-C19 for additional hematological indications. We are also advancing other CAR- and TCR-based product candidates. We filed an investigational new drug application, or IND, to initiate a Phase 1 clinical trial of our first lead TCR-based product candidate, KITE-718, at the end of 2016 and plan to open the trial for enrollment in the first half of 2017.

Components of Operating Results

Revenues

As of December 31, 2016, our revenue has been limited to a portion of the upfront payment we received under the research collaboration and license agreement with Amgen, Inc., or the Amgen Agreement, reimbursed research and development costs relating to the Amgen targets and amounts received under a research, development and commercialization agreement with the Leukemia & Lymphoma Society, Inc., or LLS. We received an upfront payment of \$60.0 million from Amgen in February 2015. Amgen will fund the research and development costs for all programs with certain limitations through any IND filing. We will reimburse Amgen for the research and development costs for any Kite program that progresses to an IND filing. Each company will then be responsible for clinical development and commercialization of their respective therapeutic candidates, including all related expenses. We may be responsible for the manufacturing and processing of Amgen program product candidates for a certain period following the completion of any Phase 2 clinical trials under a separately negotiated supply agreement, should Amgen choose not to transition manufacturing to itself or to a mutually agreed upon designee of Amgen.

We applied the FASB Accounting Standards Update No. 2009-13, Multiple-Deliverable Revenue Arrangements, in evaluating the appropriate accounting for the upfront payment and research funding under the Amgen Agreement. In accordance with this guidance, we concluded that the Amgen Agreement should be accounted for as a single unit of accounting and the Amgen Agreement consideration should be recognized in the same manner as the final deliverable, which is research service. The \$60.0 million upfront payment was recorded as deferred revenue and is being recognized over a four-year period, which is the estimated period of performance for the research service under this agreement. In addition, the Amgen research funding, which is due as the related services are performed under the Amgen Agreement, is recorded as revenue on a time and material basis, and the related costs are recorded as research and development expense in our consolidated statements of operations.

Under certain circumstances, we may be required to reimburse Amgen for research and development services for Kite targets. We will defer the recognition of revenue related to research and development services billed until the potential reimbursement contingency has lapsed. Any costs reimbursed by Amgen that relate to a Kite program that progresses to an IND filing are recorded as deferred revenue until either an IND is filed and we are required to reimburse Amgen for such expenses, or the program ends without an IND filing, at which point the revenue will be recognized.

During the year ended December 31, 2016 and 2015, we recognized \$20.0 million and \$17.1 million of revenue under the Amgen Agreement, respectively. As of December 31, 2016, we had deferred revenue relating to the Amgen Agreement of \$34.8 million, of which \$3.7 million related to Kite programs that would be paid back to Amgen in the event that the Kite programs progress to an IND filing. As of December 31, 2015, we had deferred revenue relating to the Amgen Agreement of \$47.2 million, of which \$1.1 million related to Kite programs that would potentially be paid back to Amgen in the event of an IND filing.

In the future, we may generate revenue from a combination of product sales, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or a combination of these approaches. We expect that any revenue we generate will fluctuate from quarter to quarter as a result of the timing and amount of license fees, milestone and other payments, and the amount and timing of payments that we receive upon the sale of our products, to the extent any are successfully commercialized. If we fail to complete the development of our product candidates in a timely manner or obtain regulatory approval of them, our ability to generate future revenue, and our results of operations and financial position, will be materially adversely affected.

Research and Development Expenses

Research and development costs are expensed as incurred. Research and development costs consist primarily of salaries, benefits, and other staff-related costs including associated stock-based compensation,

laboratory supplies, facilities and overhead costs, clinical trial and related clinical manufacturing costs, costs related to manufacturing preparations, fees paid to

other entities that conduct certain research and development activities on our behalf and payments made pursuant to license agreements. Clinical trial and other development costs incurred by third parties are expensed as the contracted work is performed.

We accrue for costs incurred as the services are being provided by monitoring the status of the trial or project and the invoices received from our external service providers. We adjust our accrual as actual costs become known. Where contingent milestone payments are due to third parties under research and development arrangements or license agreements, the milestone payment obligations are expensed when the milestone results are achieved.

Under certain circumstances, we may be required to reimburse Amgen for research and development services. We will defer the recognition of revenue related to research and development services billed until the potential reimbursement contingency has lapsed.

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 our research and development expenses to increase over the next several years as our ZUMA clinical program progresses and as we seek to initiate clinical trials of additional product candidates. We also expect to incur increased research and development expenses as we selectively identify and develop additional product candidates. However, it is difficult to determine with certainty the duration and completion costs of our current or future preclinical programs and clinical trials of our product candidates.

The duration, costs and timing of clinical trials and development of our product candidates will depend on a variety of factors that include, but are not limited to, the following:

- per patient trial costs;
- the number of patients that participate in the trials;
- the number of sites included in the trials;
- the countries in which the trials are conducted;
- the length of time required to enroll eligible patients;
- the number of doses that patients receive;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring or other studies requested by regulatory agencies;
- the duration of patient follow-up; and
- the efficacy and safety profile of the product candidates.

In addition, the probability of success for each product candidate will depend on numerous factors, including competition, manufacturing capability and commercial viability. We will determine which programs to pursue and how much to fund each program in response to the scientific and clinical success of each product candidate, as well as an assessment of each product candidate's commercial potential.

Because our product candidates are still in the early stages of clinical and preclinical development and the outcome of these efforts is uncertain, we cannot estimate the actual amounts necessary to successfully complete the development and commercialization of product candidates or whether, or when, we may achieve profitability. Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity or debt financings and collaboration arrangements.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other staff-related costs, including stock-based compensation, for personnel in executive, commercial, finance, accounting, legal, investor relations, facilities, business development and human resources functions. Other significant costs include costs relating to preparing for the potential commercial launch of KTE-C19, facilities and overhead costs, sublicense royalty expenses, legal fees relating to corporate and patent matters, insurance, public company expenses relating to maintaining compliance with NASDAQ listing rules and SEC requirements, investor relations costs, fees for accounting and consulting services, and other general and administrative costs. General and administrative costs are expensed as incurred, and we accrue for services provided by third parties related to the



above expenses by monitoring the status of services provided and receiving estimates from our service providers, and adjusting our accruals as actual costs become known.

We anticipate that our general and administrative expenses will increase in the future to support our continued research and development activities, potential commercialization of our product candidates and the increased costs of operating as a public company. These increases will likely include increased costs related to the hiring of additional personnel, continuing the development of our commercial infrastructure, and fees to outside consultants, lawyers and accountants, among other expenses. The increased costs associated with being a public company include expenses related to services associated with maintaining compliance with NASDAQ listing rules and SEC requirements, insurance and investor relations costs.

T-Cell Factory Acquisition

On March 17, 2015, we entered into a stock purchase agreement, or TCF Purchase Agreement, with T-Cell Factory B.V., or TCF, and the shareholders of TCF to acquire all of the outstanding capital stock of TCF. The signing and closing of the transaction happened concurrently whereupon TCF became our wholly-owned subsidiary and was renamed Kite Pharma EU B.V., or Kite Pharma EU. The TCF Purchase Agreement contains certain representations, warranties, covenants and indemnities by the parties thereto, in each case customary for a transaction of this nature and scope. We acquired TCF for the opportunity to significantly expand our pipeline of TCR-based product candidates. Using its proprietary TCR-GENErator technology platform, we believe TCF may be able to systematically discover tumor-specific TCRs. For additional information, please see Note 12 to our financial statements appearing elsewhere in this Annual Report.

Results of Operations

Comparison of the Years Ended December 31, 2016 and 2015

The following table sets forth our results of operations for the years ended December 31, 2016 and 2015.

| | YEAR ENDED DECEMBER 31, | | CHANGE \$ |
|-----------------------------------|-------------------------|--------------|--------------|
| | 2016 | 2015 | |
| | (in thousands) | | |
| Revenues | \$ 22,170 | \$ 17,258 | \$ 4,912 |
| Operating expenses: | | | |
| Research and development | 197,934 | 76,369 | 121,565 |
| General and administrative | 97,423 | 44,839 | 52,584 |
| Total operating expenses | 295,357 | 121,208 | 174,149 |
| Loss from operations | (273,187) | (103,950) | (169,237) |
| Other income (expense): | | | |
| Interest income | 3,624 | 1,809 | 1,815 |
| Interest expense | (13) | (26) | 13 |
| Other income (expense), net | (388) | 514 | (902) |
| Total other income (expense), net | 3,223 | 2,297 | 926 |
| Loss before income taxes | (269,964) | (101,653) | (168,311) |
| Benefit from income taxes | 2,894 | — | 2,894 |
| Net loss | \$ (267,070) | \$ (101,653) | \$ (165,417) |

Revenues

Revenues were \$22.2 million and \$17.3 million for the years ended December 31, 2016 and 2015, respectively. The increase in revenues during this period of \$4.9 million was primarily due to increased revenues recognized under the Amgen Agreement and our agreement with LLS.

Research and Development Expenses

Research and development expenses were \$197.9 million and \$76.4 million for the years ended December 31, 2016 and 2015, respectively. The increase in research and development expenses during this period of \$121.5 million was primarily due to:

- \$39.5 million in costs from an increase in headcount and related costs for our research and development personnel, including increased stock based compensation expense of \$14.8 million, to support increased clinical trial activities, including clinical manufacturing, and activities related to preparing for commercial manufacturing;
- \$38.3 million in costs related to research and clinical development activities, including from our clinical trials and licensing and collaborations;
- \$27.8 million in costs related to expanded clinical manufacturing activities and preparation for commercial manufacturing; and
- \$15.9 million of expenses related to facilities and overhead, depreciation and amortization, and other expenses.

General and Administrative Expenses

General and administrative expenses were \$97.4 million and \$44.8 million for the years ended December 31, 2016 and 2015, respectively. The increase in general and administrative expenses during this period of \$52.6 million was primarily due to:

- \$33.3 million in costs from an increase in headcount and related personnel costs, including increased stock based compensation expense of \$18.1 million, to support our growing business and for preparation of commercial launch; and
- \$19.3 million in costs related to increased professional services, consulting, and other external costs primarily due to the expansion of our information technology infrastructure, pre-commercial activities and higher legal, accounting and other costs to support our growing business.

Interest Income

Interest income was \$3.6 million and \$1.8 million for the years ended December 31, 2016 and 2015, respectively. The increase in interest income during this period of \$1.8 million was primarily due to higher invested marketable securities balances.

Benefit From Income Taxes

Benefit from income taxes was \$2.9 million and \$0 for the years ended December 31, 2016 and 2015, respectively. The increase was primarily due to a tax benefit recognized that related to net operating losses from foreign operations for which we recorded income tax benefit to the extent of our foreign deferred tax liabilities. The excess tax benefit was not recorded due to a valuation allowance.

Comparison of the Years Ended December 31, 2015 and 2014

The following table sets forth our results of operations for the years ended December 31, 2015 and 2014.

| | YEAR ENDED DECEMBER 31, | | CHANGE \$ | |
|-----------------------------------|----------------------------|-------------|----------------|--|
| | | | | |
| | 2015 | 2014 | | |
| | | | (in thousands) | |
| Revenues | \$ 17,258 | \$ — | \$ 17,258 | |
| Operating expenses: | | | | |
| Research and development | 76,369 | 23,089 | 53,280 | |
| General and administrative | 44,839 | 13,569 | 31,270 | |
| Total operating expenses | 121,208 | 36,658 | 84,550 | |
| Loss from operations | (103,950) | (36,658) | (67,292) | |
| Other income (expense): | | | | |
| Interest income | 1,809 | 371 | 1,438 | |
| Interest expense | (26) | (6,269) | 6,243 | |
| Other income (expense), net | 514 | (13) | 527 | |
| Total other income (expense), net | 2,297 | (5,911) | 8,208 | |
| Net loss | \$ (101,653) | \$ (42,569) | \$ (59,084) | |

Revenues

Revenues were \$17.3 million and \$0 for the years ended December 31, 2015 and 2014, respectively. The increase in revenues during this period was primarily due to revenues recognized under the Amgen Agreement of \$17.1 million, as well as \$0.2 million of revenues recognized related to an agreement with LLS.

Research and Development Expenses

Research and development expenses were \$76.4 million and \$23.1 million for the years ended December 31, 2015 and 2014, respectively. The increase in research and development expenses during this period of \$53.3 million was primarily due to:

- \$14.5 million in costs related to growth in our product development program and Amgen pre-clinical development program;
- \$12.9 million of expenses related to expanded clinical manufacturing, facilities, depreciation, travel, and other expenses;
- \$11.8 million in compensation expense related to increased research and development staff and consultant costs;
- \$10.0 million in stock-based compensation expense related to our increases of research and development staff and consultants; and
- \$4.1 million in costs related to expanded our Kite Pharma EU operations.

General and Administrative Expenses

General and administrative expenses were \$44.8 million and \$13.6 million for the years ended December 31, 2015 and 2014, respectively. The increase in general and administrative expenses during this period of \$31.2 million was primarily due to:

- \$14.6 million of stock-based compensation expenses related to increase in our administrative staff and consultants;
- \$8.2 million of expenses related to increased personnel costs, including employees and professional fees;
- \$5.2 million of expenses related to increase in legal and accounting services, public company expenses, and other expenses; and
- \$3.2 million of increase in expenses related to license obligations.

Interest Expenses

Interest expense was \$26,000 and \$6.3 million for the years ended December 31, 2015 and 2014, respectively. The decrease in interest expense during this period of \$6.2 million was primarily due to the beneficial conversion feature on the 2014 Notes in fiscal 2014, as further described under Note 7 to our financial statements appearing elsewhere in this Annual Report. The 2014 Notes converted into common shares at the initial public offering, and therefore there were no similar expenses in 2015.

Liquidity and Capital Resources

As of December 31, 2016, we had \$414.4 million in cash, cash equivalents, and marketable securities. In January 2017, we received a \$50.0 million upfront payment as part of our Collaboration and License Agreement with Daiichi Sankyo Company, Limited. For more information regarding this agreement, see Note 13 to our financial statements appearing elsewhere in this Annual Report. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation.

We have funded our operations principally from the sale of common stock, and through the Amgen collaboration. In 2015, we received an upfront payment of \$60.0 million from Amgen, and raised approximately \$300.7 million in net proceeds from our follow-on offering of common shares in December 2015 as well as from the net proceeds received in January 2015 from the underwriters' exercise in full of their over-allotment option from our December 2014 follow-on offering of common shares.

We have incurred losses and cumulative negative cash flows from operations since our inception in 2009 and, as of December 31, 2016, we had an accumulated deficit of \$426.7 million. We anticipate that we will

continue to incur losses for the foreseeable future and our product candidates may never achieve commercialization. We expect that our research and development expenses, general and administrative expenses, and capital expenditures will continue to increase. As a result, until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity or debt financings and collaboration arrangements. Our primary uses of capital are, and we expect will

continue to be, compensation and related expenses, third-party clinical research and development services, costs relating to preparing for the potential commercial launch of KTE-C19, license payments or milestone obligations that may arise, laboratory and related supplies, clinical costs, manufacturing costs, legal and other regulatory expenses and general overhead costs.

Cash Flows

The following table sets forth the significant sources and uses of cash for the periods set forth below:

| | YEAR ENDED DECEMBER 31, | | |
|---|-------------------------|-------------------|-------------------|
| | 2016 | 2015 | 2014 |
| | (in thousands) | | |
| Net cash provided by (used in): | | | |
| Operating activities | \$ (168,904) | \$ (19,032) | \$ (17,072) |
| Investing activities | (112,941) | (106,540) | (160,139) |
| Financing activities | 3,695 | 309,068 | 364,152 |
| Effect of exchange rate changes on cash | (132) | 49 | — |
| Net change in cash and cash equivalents | <u>\$ (278,282)</u> | <u>\$ 183,545</u> | <u>\$ 186,941</u> |

Operating Activities

Net cash used in operating activities was \$168.9 million during the year ended December 31, 2016 as compared to \$19.0 million during the year ended December 31, 2015. The increase in cash used in operating activities of \$149.9 million between the year ended December 31, 2016 and 2015 was primarily the result of increased operating expenses due to additional headcount, facilities related costs, research and development expenses, manufacturing development costs and clinical activities and less cash received under the Amgen Agreement.

Net cash used in operating activities was \$19.0 million during the year ended December 31, 2015 as compared to \$17.1 million during the year ended December 31, 2014. The increase in cash used in operating activities of \$1.9 million between the year ended December 31, 2015 and 2014 was primarily the result increased operating expenses due to additional headcount, facilities related costs, and payments made under the Cabaret license and other research and development and clinical activities, partially offset by cash received from Amgen as an upfront payment related to the Amgen Agreement.

Investing Activities

Net cash used in investing activities was \$112.9 million during the year ended December 31, 2016 as compared to \$106.5 million during the year ended December 31, 2015. The increase in cash used in investing activities of \$6.4 million between the year ended December 31, 2016 and 2015 was primarily the result of the investment of the proceeds from our December 2015 follow-on offering and transactional activity related to our marketable securities portfolio, as well as our investment in Cell Design Labs, partially offset by less cash used for the purchase of property and equipment and to fund the TCF acquisition.

Net cash used in investing activities was \$106.5 million during the year ended December 31, 2015 as compared to \$160.1 million during the year ended December 31, 2014. The decrease in cash used in investing activities of \$53.6 million between the year ended December 31, 2015 and 2014 was primarily the result of increased transactional activity related to our marketable securities portfolio in 2014 as compared to 2015, offset by cash used to purchase equipment as well as cash used to fund the acquisition of TCF.

Financing Activities

Net cash provided by financing activities was \$3.7 million during the year ended December 31, 2016 as compared to \$309.1 million during the year ended December 31, 2015. The decrease in cash provided by financing activities of \$305.4 million between the year ended December 31, 2016 and 2015 was primarily due to the December 2015 follow-on offering of common shares, with no comparable activity in 2016.

Net cash provided by financing activities was \$309.1 million during the year ended December 31, 2015 as compared to \$364.2 million during the year ended December 31, 2014. The decrease in cash provided by financing activities of \$55.1 million between the year ended December 31, 2015 and 2014 was primarily the

result of greater proceeds from our initial public offering in June 2014 and the follow-on offering completed in December 2014 as well as proceeds from issuance of convertible notes in 2014, as compared to the 2015 proceeds from the underwriters' exercise in full of their over-allotment option from the

December 2014 follow-on offering and the proceeds from an additional follow-on offering, and underwriters' exercise in full of their over-allotment option, in December 2015.

Contractual Obligations and Commitments

The following summarizes our significant contractual obligations as of December 31, 2016.

| | TOTAL | LESS THAN | 1 TO 3 | 3 TO 5 | MORE THAN |
|---|------------|-----------|-----------|-----------|------------|
| | | 1 YEAR | YEARS | YEARS | 5 YEARS |
| (in thousands) | | | | | |
| Lease obligations ⁽¹⁾ | \$ 235,087 | \$ 5,294 | \$ 23,803 | \$ 34,045 | \$ 171,945 |
| Minimum license agreements ⁽²⁾ | 1,259 | 1,259 | — | — | — |
| Minimum purchase commitments ⁽³⁾ | 1,853 | 1,853 | — | — | — |
| Total | \$ 238,199 | \$ 8,406 | \$ 23,803 | \$ 34,045 | \$ 171,945 |

(1) Consists of our lease agreements for facilities used for administrative, manufacturing and research and development activities. See Note 11 to our financial statements appearing elsewhere in this Annual Report for additional information regarding our lease obligations.

(2) Consists of \$1.3 million required to be paid to our collaborators.

(3) Consists of non-cancellable obligations under certain supply agreements for raw materials used in the manufacture of our product candidates.

The CRADAs and certain of our license agreements under which we may be required to pay quarterly or annual fees are generally cancelable by us, given appropriate prior written notice and, as such, are excluded from the table above, unless the fees were already incurred at December 31, 2016. The annual amount payable by us to maintain the CRADAs and certain of our license agreements is approximately \$2.5 million. Other than as disclosed in the table above, the payment obligations under the license agreements, collaboration agreements, such as the Amgen Agreement, and TCF Purchase Agreement, are contingent upon future events such as our achievement of specified development, regulatory and commercial milestones and may also include future royalty obligations upon commercialization of our product candidates. See Note 6 and Note 12 to our financial statements appearing elsewhere in this Annual Report for additional information regarding these payment obligations. As of December 31, 2016, we were unable to estimate the timing or likelihood of achieving the milestones or making future product sales and, therefore, any related payments are not included in the table above.

We have entered and will enter into other contracts in the normal course of business with third-party manufacturers, contract research organizations for clinical trials and other vendors for other services and products for operating purposes. These agreements generally provide for termination or cancellation, and, other than for costs already incurred, are not included in the table above.

Off-Balance Sheet Arrangements

We have not entered into, nor do we currently have any off-balance sheet arrangements, as defined under SEC rules.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States, or GAAP. The preparation of these financial statements requires us to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities as of the dates of the balance sheets and the reported amounts of revenue and expenses during the reporting periods. In accordance with GAAP, we base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances at the time such estimates are made. Actual results may differ materially from our estimates and judgments under different assumptions or conditions. We periodically review our estimates in light of changes in circumstances, facts and experience. The effects of material revisions in estimates, if any, are reflected in our financial statements prospectively from the date of the change in estimate.

We define our critical accounting policies as those accounting principles generally accepted in the United States that require us to make subjective estimates and judgments about matters that are uncertain and are likely to have a material impact on our financial condition and results of operations, as well as the specific manner in which we apply those principles. While our

significant accounting policies are more fully described in Note 3 to our financial statements appearing elsewhere in this Annual Report, we believe the following are the critical accounting policies used in the preparation of our financial statements that require significant estimates and judgments.

Revenues

We primarily recognize revenue when evidence of an arrangement exists, transfer of technology has been completed or services have been rendered, the price is fixed and determinable, and collectability is reasonable assured. We enter into arrangements with pharmaceutical and biotechnology partners that may involve multiple deliverables. Our arrangements may contain upfront payments, license fees for research and development arrangements, royalties on future sales of any commercialized products, research and development funding and milestone payments under collaborative agreements. Each deliverable in the arrangement is evaluated to determine whether it meets the criteria to be accounted for as a separate unit of accounting or whether it should be combined with other deliverables.

Upfront fees

If we determine that there is a single unit of accounting under its collaborative arrangements, upfront fees received for collaborative agreements are recognized ratably over the expected performance period under each respective arrangement. As a result, management makes its best estimate of the period over which we expect to fulfill our performance obligations under an arrangement. Any amounts received under the arrangement in advance of performance, if deemed substantive, are recorded as deferred revenue and recognized as revenue as we complete our performance obligations.

Milestones

We evaluate all milestones at the beginning of the agreement to determine if they meet the definition of a substantive milestone. Revenue is recognized from milestone payments when earned, provided that (i) the milestone event is substantive, in that it can only be achieved based in whole or in part on either our performance or on the occurrence of a specific outcome resulting from our performance, and its achievability was not reasonably assured at the inception of the agreement, (ii) we do not have ongoing performance obligations related to the achievement of the milestone, and (iii) it would result in the receipt of additional payments. A milestone payment is considered substantive if all of the following conditions are met: (i) the milestone payment is non-refundable; (ii) achievement of the milestone was not reasonably assured at the inception of the arrangement; (iii) substantive effort is involved to achieve the milestone; and (iv) the amount of the milestone payments appears reasonable in relation to the effort expended, the other milestones in the arrangement and the related risk associated with the achievement of the milestone.

Fees for research and development services

The deliverables under our collaboration and license agreements generally include deliverables related to research and development services performed on behalf of the collaboration partner. As the provision of research and development services is a part of our central operations and we are principally responsible for the performance of these services under the agreements, revenue is recognized on a gross basis for research and development services as those services are performed. Additionally, we recognize research funding related to collaborative research and development efforts as revenue as we perform or deliver the related services in accordance with contract terms as long as we will receive payment for such services upon standard payment terms.

Deferred Revenue

Amounts received prior to satisfying the above revenue recognition criteria are recorded as deferred revenue in the accompanying consolidated balance sheets. Amounts not expected to be recognized within the next 12 months are classified as non-current deferred revenue.

See Note 6 to our financial statements appearing elsewhere in this Annual Report for further discussion regarding revenue recognized during the year ended December 31, 2016.

Research and Development

Research and development costs are expensed as incurred. Clinical trial and other development costs incurred by third parties are expensed as the contracted work is performed. We accrue for costs incurred as the services are being provided by monitoring the status of the trial or project and the invoices received from our external service providers. We adjust our accrual as actual costs become known. Where

contingent milestone payments are due to third parties under research and development arrangements, the milestone payment obligations are expensed when the milestone results are achieved.

Income Taxes

We provide for income taxes based on pretax income, if any, and applicable tax rates available in the various jurisdictions in which we operate. Deferred income taxes are recorded for the expected tax consequences of temporary differences between the bases of assets and liabilities for financial reporting purposes and amounts recognized for income tax purposes. We record a valuation allowance to reduce our deferred tax assets to the amount of future tax benefit that is more likely than not to be realized.

We recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained upon examination by the taxing authorities based on the technical merits of the position. The tax benefit recognized in the financial statements for a particular tax position is based on the largest benefit that is more likely than not to be realized. The amount of unrecognized tax benefits, or UTBs, is adjusted as appropriate for changes in facts and circumstances, such as significant amendments to existing tax law, new regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. It is our policy to recognize both accrued interest and penalties, if any, related to UTBs in income tax expense. See Note 9 to our financial statements appearing elsewhere in this Annual Report.

Business Combinations

Business combinations are accounted for using the acquisition method of accounting. Under the acquisition method, all assets acquired and liabilities assumed are recorded at their respective fair values as of the acquisition date in our consolidated financial statements. The excess of the fair value of consideration transferred over the fair value of the net assets acquired is recorded as goodwill. Contingent consideration obligations incurred in connection with a business combination are recorded at their fair values on the acquisition date and their fair values are adjusted as appropriate until the related contingencies are resolved. The resulting changes in fair values are recorded in earnings. See Note 4 and Note 12 to our financial statements appearing elsewhere in this Annual Report.

Stock-Based Compensation

Stock-based compensation cost is measured at the grant date based on the fair value of the award and is recognized as expense over the required service period, which is generally equal to the vesting period. Stock-based compensation is recognized only for those awards that are ultimately expected to vest. Common stock, stock options, restricted stock units, and warrants or other equity instruments issued to non-employees, including consultants and members of our Scientific Advisory Board as consideration for goods or services received by us, are accounted for based on the fair value of the equity instruments issued unless the fair value of the consideration received can be more reliably measured. The fair value of stock options is determined using the Black-Scholes option-pricing model. The fair value of any awards issued to non-employees is recorded as expense over the vesting period. The fair value of a restricted stock unit equals the closing price of our common stock on the grant date. Proceeds from options exercised by employees prior to vesting pursuant to an early exercise provision, the related shares of which we have the option to repurchase prior to the vesting date should employment of the early exercised option holder be terminated, are recognized as a liability until the shares vest.

Item 7A. Quantitative and Qualitative Disclosures about Market Risks

Interest Rate Fluctuation Risk

Some of the securities in which we invest have market risk in that a change in prevailing interest rates may cause the principal amount of the marketable securities to fluctuate. Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of cash, cash equivalents and marketable securities. As of December 31, 2016, we had \$114.6 million in cash and cash equivalents, and \$299.9 million in marketable securities. Our cash equivalents and marketable securities are comprised of certificates of deposit, commercial paper and debt instruments of financial institutions, corporations, U.S. government-sponsored agencies and the U.S. Treasury. The primary objectives of our investment activities are to ensure liquidity and to preserve principal while at the same time maximizing the income we receive from our marketable securities without significantly increasing risk. We have established guidelines regarding approved investments and maturities of investments, which are designed to maintain safety and liquidity. Our available for sale securities are subject to interest rate risk and will fall in value if market interest rates increase. If market interest rates were to increase immediately and uniformly by 100 basis points, or one percentage point, from levels at December 31, 2016, the net fair value of our interest-sensitive marketable securities would have resulted in a hypothetical decline of approximately \$3.0 million.

Inflation generally may affect us by increasing our cost of labor and clinical trial costs. Inflation has not had a material effect on our business, financial condition or results of operations during the years ended December 31, 2016, 2015 or 2014.

Foreign Currency Exchange Risk

The majority of our transactions occur in U.S. dollars. However, we do have certain transactions and future potential milestones, including potential contingent consideration payments pursuant to the terms of our TCF acquisition, that are denominated in Euros, and we therefore are subject to foreign exchange risk. Additionally, our subsidiary Kite Pharma EU operates with the Euro as its functional currency. The fluctuation in the value of the U.S. dollar against the Euro affects the reported amounts of revenues, expenses, assets and liabilities. As we expand our international operations, our exposure to exchange rate fluctuations will increase. Our balance sheet as of December 31, 2016 includes cash and cash equivalent balances of \$0.1 million denominated in Euros. A hypothetical 10% change in foreign exchange rates during any of the periods presented would not have had a material impact on our consolidated financial statements.

Item 8. Financial Statements and Supplementary Data

Kite Pharma, Inc.
Index to consolidated financial statements

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Kite Pharma, Inc.

We have audited the accompanying Consolidated Balance Sheets of Kite Pharma, Inc. (the "Company") as of December 31, 2016 and 2015, and the related Consolidated Statements of Operations and Comprehensive Loss, Changes in Stockholders' Equity and Cash Flows for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Kite Pharma, Inc. at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Kite Pharma, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 28, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Los Angeles, California
February 28, 2017

KITE PHARMA, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)

| | DECEMBER 31, 2016 | DECEMBER 31, 2015 |
|--|----------------------|----------------------|
| ASSETS | | |
| Current assets: | | |
| Cash and cash equivalents | \$ 114,561 | \$ 392,843 |
| Marketable securities | 299,861 | 221,879 |
| Prepaid expenses and other current assets | 12,974 | 16,371 |
| Total current assets | 427,396 | 631,093 |
| Restricted cash and investments | 10,669 | 1,540 |
| Property and equipment, net | 44,409 | 30,116 |
| Intangible assets, net | 6,946 | 11,380 |
| Goodwill | 24,452 | 25,360 |
| Other assets | 10,432 | 8,474 |
| Total assets | <u>\$ 524,304</u> | <u>\$ 707,963</u> |
| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
| Current liabilities: | | |
| Accounts payable | \$ 10,660 | \$ 8,049 |
| Accrued expenses and other current liabilities | 29,482 | 11,787 |
| Deferred revenue | 15,000 | 16,333 |
| Total current liabilities | 55,142 | 36,169 |
| Deferred revenue, less current portion | 19,779 | 32,176 |
| Contingent consideration | 14,218 | 16,080 |
| Other non-current liabilities | 7,195 | 7,778 |
| Total liabilities | <u>96,334</u> | <u>92,203</u> |
| COMMITMENTS AND CONTINGENCIES (NOTE 11) | | |
| STOCKHOLDERS' EQUITY | | |
| Preferred Stock, \$0.001 par value, 10,000,000 shares authorized, 0 shares issued and outstanding at December 31, 2016 and December 31, 2015 | — | — |
| Common stock, \$0.001 par value, 200,000,000 shares authorized; 50,083,355 and 48,671,757 shares issued and outstanding, excluding 298,758 and 1,091,306 shares subject to repurchase at December 31, 2016 and December 31, 2015, respectively | 50 | 49 |
| Additional paid-in capital | 855,564 | 775,588 |
| Accumulated other comprehensive loss | (917) | (220) |
| Accumulated deficit | (426,727) | (159,657) |
| Total stockholders' equity | <u>427,970</u> | <u>615,760</u> |
| Total liabilities and stockholders' equity | <u>\$ 524,304</u> | <u>\$ 707,963</u> |

See accompanying notes.

KITE PHARMA, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(in thousands, except share and per share amounts)

| | YEAR ENDED DECEMBER 31, | | |
|--|-------------------------|---------------------|--------------------|
| | 2016 | 2015 | 2014 |
| Revenues | \$ 22,170 | \$ 17,258 | \$ — |
| Operating expenses: | | | |
| Research and development | 197,934 | 76,369 | 23,089 |
| General and administrative | 97,423 | 44,839 | 13,569 |
| Total operating expenses | <u>295,357</u> | <u>121,208</u> | <u>36,658</u> |
| Loss from operations | (273,187) | (103,950) | (36,658) |
| Other income (expense): | | | |
| Interest income | 3,624 | 1,809 | 371 |
| Interest expense | (13) | (26) | (6,269) |
| Other income (expense), net | <u>(388)</u> | <u>514</u> | <u>(13)</u> |
| Total other income (expense), net | <u>3,223</u> | <u>2,297</u> | <u>(5,911)</u> |
| Loss before income taxes | (269,964) | (101,653) | (42,569) |
| Benefit from income taxes | 2,894 | — | — |
| Net loss | <u>(267,070)</u> | <u>(101,653)</u> | <u>(42,569)</u> |
| Series A preferred stock dividend | — | — | (1,089) |
| Net loss attributable to common stockholders | <u>\$ (267,070)</u> | <u>\$ (101,653)</u> | <u>\$ (43,658)</u> |
| Net loss per share, basic and diluted | <u>\$ (5.46)</u> | <u>\$ (2.33)</u> | <u>\$ (1.91)</u> |
| Weighted-average shares outstanding, basic and diluted | <u>48,940,290</u> | <u>43,636,652</u> | <u>22,822,204</u> |
| Comprehensive loss: | | | |
| Net loss | \$ (267,070) | \$ (101,653) | \$ (42,569) |
| Foreign currency translation adjustments | (406) | 599 | — |
| Unrealized loss on available-for-sale securities, net | (291) | (522) | (297) |
| Comprehensive loss | <u>\$ (267,767)</u> | <u>\$ (101,576)</u> | <u>\$ (42,866)</u> |

See accompanying notes.

KITE PHARMA, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share amounts)

| | SERIES A PREFERRED STOCK | | COMMON STOCK | | ADDITIONAL PAID-IN CAPITAL | | ACCUMULATED DEFICIT | | ACCUMULATED OTHER COMPREHENSIVE LOSS | | TOTAL STOCKHOLDERS' EQUITY |
|--|-----------------------------|--------|--------------|--------|----------------------------------|--------------|------------------------|----------|---|-----------|----------------------------------|
| | SHARES | AMOUNT | SHARES | AMOUNT | \$ | \$ | \$ | \$ | \$ | \$ | |
| Balance at December 31, 2013 | 20,315,397 | \$ 20 | 5,527,816 | \$ 6 | \$ 36,990 | \$ (15,435) | \$ — | \$ — | \$ 21,581 | | |
| Stock based compensation | — | — | 7,812 | — | 16,145 | — | — | — | — | 16,145 | |
| Stock option exercise | — | — | 515,035 | — | 386 | — | — | — | — | 386 | |
| Issuance of common stock, net | — | — | 12,110,000 | 13 | 311,218 | — | — | — | — | 311,231 | |
| Conversion of convertible notes into common stock | — | — | 3,300,735 | 3 | 50,498 | — | — | — | — | 50,501 | |
| Conversion of preferred stock into common stock | (20,315,397) | (20) | 20,315,397 | 20 | — | — | — | — | — | — | |
| Payment of preferred stock dividend in common stock | — | — | 78,509 | — | — | — | — | — | — | — | |
| Convertible securities beneficial conversion feature | — | — | — | — | 5,611 | — | — | — | — | 5,611 | |
| Accumulated other comprehensive loss | — | — | — | — | — | — | — | — | (297) | (297) | |
| Net loss | — | — | — | — | — | (42,569) | — | — | — | (42,569) | |
| Balance at December 31, 2014 | — | \$ — | 41,855,304 | \$ 42 | \$ 420,848 | \$ (58,004) | \$ (297) | \$ (297) | \$ 362,589 | | |
| Stock based compensation | — | — | — | — | 40,420 | — | — | — | — | 40,420 | |
| Issuances under equity incentive plans | — | — | 2,000,369 | 2 | 8,296 | — | — | — | — | 8,298 | |
| Issuance of common stock, net | — | — | 4,691,500 | 5 | 300,716 | — | — | — | — | 300,721 | |
| Issuance of common stock related to acquisition | — | — | 66,121 | — | 4,209 | — | — | — | — | 4,209 | |
| Common stock warrants exercised | — | — | 10,606 | — | — | — | — | — | — | — | |
| Employee stock purchase plan | — | — | 47,857 | — | 1,099 | — | — | — | — | 1,099 | |
| Accumulated other comprehensive loss | — | — | — | — | — | — | — | — | 77 | 77 | |
| Net loss | — | — | — | — | — | (101,653) | — | — | — | (101,653) | |
| Balance at December 31, 2015 | — | \$ — | 48,671,757 | \$ 49 | \$ 775,588 | \$ (159,657) | \$ (220) | \$ (220) | \$ 615,760 | | |
| Stock based compensation | — | — | — | — | 73,579 | — | — | — | — | 73,579 | |
| Issuances under equity incentive plans | — | — | 1,342,753 | 1 | 4,650 | — | — | — | — | 4,651 | |
| Employee stock purchase plan | — | — | 68,845 | — | 1,747 | — | — | — | — | 1,747 | |
| Accumulated other comprehensive loss | — | — | — | — | — | — | — | — | (697) | (697) | |
| Net loss | — | — | — | — | — | (267,070) | — | — | — | (267,070) | |
| Balance at December 31, 2016 | — | \$ — | 50,083,355 | \$ 50 | \$ 855,564 | \$ (426,727) | \$ (917) | \$ (917) | \$ 427,970 | | |

See accompanying notes.

KITE PHARMA, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

| | YEAR ENDED DECEMBER 31, | | |
|--|-------------------------|-------------------|-------------------|
| | 2016 | 2015 | 2014 |
| Cash flows from operating activities | | | |
| Net loss | \$ (267,070) | \$ (101,653) | \$ (42,569) |
| Adjustment to reconcile net loss to net cash from operating activities | | | |
| Depreciation and amortization | 10,598 | 4,606 | 262 |
| Stock-based compensation | 73,579 | 40,420 | 16,145 |
| Noncash interest expense | — | — | 6,114 |
| Deferred tax | (2,895) | — | — |
| Restricted cash | (2,122) | (1,540) | — |
| Fair value adjustment of contingent consideration | 853 | 632 | — |
| Amortization on marketable securities | 1,617 | 630 | — |
| Loss related to equity method investment | 478 | — | — |
| Other | 391 | (888) | 19 |
| Changes in operating assets and liabilities | | | |
| Deferred revenue | (13,731) | 48,510 | — |
| Deferred rent | 3,625 | 1,649 | 72 |
| Prepaid expenses and other current assets | 3,284 | (14,762) | (1,089) |
| Other assets | 3,588 | (8,344) | (180) |
| Accounts payable | 2,255 | 4,534 | 1,937 |
| Accrued expenses and other current liabilities | 16,044 | 7,088 | 2,285 |
| Due to related parties | 602 | 86 | (68) |
| Net cash used in operating activities | <u>(168,904)</u> | <u>(19,032)</u> | <u>(17,072)</u> |
| Cash flows from investing activities | | | |
| Purchase of property and equipment | (20,146) | (26,573) | (2,100) |
| Purchases of marketable securities | (351,739) | (222,135) | (1,194,930) |
| Sales and maturities of marketable securities | 264,969 | 156,858 | 1,036,891 |
| Cash paid for equity investment in Cell Design Labs | (6,025) | — | — |
| Net cash paid related to acquisition | — | (14,690) | — |
| Net cash used in investing activities | <u>(112,941)</u> | <u>(106,540)</u> | <u>(160,139)</u> |
| Cash flows from financing activities | | | |
| Principal payments on capital lease obligations | (126) | (16) | (17) |
| Payment of contingent consideration | (2,259) | — | — |
| Initial public offering costs | — | — | (23,585) |
| Proceeds from issuance of common stock | — | 300,721 | 334,815 |
| Proceeds from exercise of stock options | 3,711 | 6,958 | 2,939 |
| Proceeds from employee stock purchase plan | 2,369 | 1,405 | — |
| Proceeds from issuance of convertible notes | — | — | 50,000 |
| Net cash provided by financing activities | <u>3,695</u> | <u>309,068</u> | <u>364,152</u> |
| Effect of exchange rate changes on cash | (132) | 49 | — |
| Net change in cash and cash equivalents | <u>(278,282)</u> | <u>183,545</u> | <u>186,941</u> |
| Cash and cash equivalents at beginning of period | 392,843 | 209,298 | 22,357 |
| Cash and cash equivalents at end of period | <u>\$ 114,561</u> | <u>\$ 392,843</u> | <u>\$ 209,298</u> |
| Supplemental schedule of cash flows information: | | | |
| Cash paid for interest | <u>\$ 13</u> | <u>\$ 2</u> | <u>\$ 153</u> |
| Proceeds from employee stock plan received in advance of issuance | <u>\$ 1,212</u> | <u>\$ 590</u> | <u>\$ —</u> |
| Supplemental schedule of non-cash investing and financing activities: | | | |
| Conversion of convertible notes and accrued interest into equity | <u>\$ —</u> | <u>\$ —</u> | <u>\$ 50,501</u> |

| | | | |
|--|------|----------|----------|
| Discount from conversion of securities convertible into equity | \$ — | \$ — | \$ 5,612 |
| Conversion of convertible securities into equity | \$ — | \$ — | \$ 2,525 |
| Tenant improvement allowance receivable | \$ — | \$ 2,614 | \$ — |
| Issuance of stock to purchase T-Cell Factory, B.V. | \$ — | \$ 4,209 | \$ — |

NOTE 1—BUSINESS AND NATURE OF OPERATIONS

Nature of Operations

Kite Pharma, Inc. (including its subsidiaries, referred to as "Kite", "the Company", "we", "our", or "us") was incorporated on June 1, 2009 in the State of Delaware and is headquartered in Santa Monica, California. The Company is a clinical-stage biopharmaceutical company focused on the development and commercialization of novel cancer immunotherapy products designed to harness the power of a patient's own immune system to eradicate cancer cells. The Company is developing multiple product candidates using its engineered autologous cell therapy, which involves the genetic engineering of T cells to express either chimeric antigen receptors ("CARs") or T cell receptors ("TCRs").

Since commencing operations, the Company has devoted substantially all of its efforts to securing intellectual property rights, performing research and development activities, including conducting clinical trials and manufacturing activities, hiring personnel, preparing for the potential commercial launch of its lead product candidate, KTE-C19, and raising capital to support and expand these activities. On March 17, 2015, the Company acquired T-Cell Factory B.V. ("TCF"), a Dutch company, for the opportunity to expand the Company's pipeline of TCR-based product candidates. TCF has been renamed Kite Pharma EU B.V. ("Kite Pharma EU").

NOTE 2—BASIS OF PRESENTATION

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). The consolidated financial statements include the accounts of Kite and its wholly-owned subsidiaries. All material intercompany balances and transactions have been eliminated during consolidation.

In 2016, the Company identified that the 2015 activities related to restricted cash of \$1.5 million had been presented in cash flows from investing activities instead of cash flows from operating activities and the 2015 activities related to the Company's employee stock purchase plan of \$1.4 million had been presented in cash flows from operating activities instead of cash flows from financing activities. The Company corrected the previously presented cash flows for these items and in doing so, the consolidated statements of cash flows for 2015 were adjusted to increase the net cash used in operating activities by \$2.9 million, decrease the net cash used in investing activities by \$1.5 million, and increase the net cash provided from financing activities by \$1.4 million. The Company has evaluated the effect of the incorrect presentation, both qualitatively and quantitatively, and concluded that it did not have a material impact on, nor require amendment of, any previously filed annual or quarterly consolidated financial statements.

The Company has not generated any revenue from the sale of products since its inception. The Company has experienced net losses since its inception and has an accumulated deficit of \$426.7 million and \$159.7 million as of December 31, 2016 and December 31, 2015, respectively. The Company expects to incur losses and have negative net cash flows from operating activities as it prepares for potential commercialization of its lead product candidate, KTE-C19, and as it expands its portfolio and engages in further research and development activities, particularly conducting preclinical studies and clinical trials.

The success of the Company depends on its ability to develop its technologies to the point of U.S. Food and Drug Administration ("FDA") approval and subsequent revenue generation or through the sale, merger, or other transfer of all or substantially all of the Company's assets and, accordingly, to raise enough capital to finance these developmental efforts. In the future, management will need to raise additional capital to finance the continued operating and capital requirements of the Company. Any amounts raised may be used for the further development and commercialization of our product candidates, acquire additional product licenses and for other working capital purposes. There can be no assurances that the Company will be able to secure such additional financing, or if available, that it will be sufficient to meet its needs. If the Company cannot obtain adequate working capital, it will be forced to reevaluate its planned business operations.

NOTE 3—SIGNIFICANT ACCOUNTING POLICIES

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and reported amounts of revenue and expenses during the reporting period. Accordingly, actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents. Cash and cash equivalents consist primarily of money market funds, bank money market accounts, certificates of deposit, and U.S. treasury securities, and are stated at cost, which approximates fair value.

Restricted Cash and Investments

The Company has amounts that are posted as secured collateral in connection with letters of credit relating to the Company's leases of its commercial manufacturing and support facilities. These amounts reported as restricted cash totaled \$3.7 million and \$1.5 million at December 31, 2016 and 2015, respectively.

In November 2016, the Company pledged \$7.0 million of government-related debt securities against a \$5.5 million letter of credit to secure a lease agreement entered into in November 2016. See Note 11 for further discussion. These investments have been included within the restricted cash and investments caption at December 31, 2016. The letter of credit amount was increased by \$5.5 million in January 2017, resulting in an additional \$7.2 million of government-related debt securities being reported as restricted cash and investments in January 2017.

Marketable Securities

The Company's marketable securities have been classified as "available-for-sale" and are carried at fair value as determined based upon quoted market prices or pricing models for similar securities. Management determines the appropriate classification of its investments in debt securities at the time of purchase and reevaluates such designation as of each balance sheet date. Unrealized gains and losses are excluded from earnings and are reported as a component of comprehensive loss. Realized gains and losses and declines in fair value judged to be other than temporary, if any, on available-for-sale securities are included in other income (expense), net. The cost of securities sold is based on the specific-identification method. Interest on marketable securities is included in interest income.

Concentration of Credit Risk

Financial instruments, which potentially subject the Company to significant concentrations of credit risk, consist primarily of cash and cash equivalents and marketable securities. The primary objectives for the Company's investment portfolio are the preservation of capital and the maintenance of liquidity. The Company does not enter into any investment transaction for trading or speculative purposes.

The Company's investment policy limits investments to certain types of instruments such as certificates of deposit, money market instruments, obligations issued by the U.S. government and U.S. government agencies as well as corporate debt securities, and places restrictions on maturities and concentration by type and issuer. The Company maintains cash balances in excess of amounts insured by the FDIC and concentrated within a limited number of financial institutions. The accounts are monitored by management to mitigate the risk.

Foreign Currencies

As a result of a business combination, the Company now operates in multiple currencies. Related to the wholly-owned subsidiary, Kite Pharma EU, the Company has determined that based on the nature of the transactions occurring within this entity, the functional currency of the subsidiary is the Euro, and accordingly, any net assets of Kite Pharma EU, including goodwill and identifiable intangible assets, are translated into U.S. dollars at the rates prevailing as of the balance sheet dates. The operating results of Kite Pharma EU are translated into U.S. dollars using the average exchange rates for the period correlating with those operating results. Any translation impact is included as a component of accumulated other comprehensive loss on the consolidated balance sheets.

Income Taxes

The Company provides for income taxes based on pretax income, if any, and applicable tax rates available in the various jurisdictions in which it operates. Deferred income taxes are recorded for the expected tax consequences of temporary differences between the bases of assets and liabilities for financial reporting purposes and amounts recognized for income tax purposes. A valuation allowance is recorded to reduce the Company's deferred tax assets to the amount of future tax benefit that is more likely than not to be realized.

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The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained upon examination by the taxing authorities based on the technical merits of the position. The tax benefit recognized in the financial statements for a particular tax position is based on the largest benefit that is more likely than not to be realized. The amount of unrecognized tax benefits (UTBs) is adjusted as appropriate for changes in facts and circumstances, such as significant amendments to existing tax law, new regulations or interpretations by the taxing authorities, new information obtained during a tax examination, or resolution of an examination. It is the Company's policy to recognize both accrued interest and penalties, if any, related to UTBs in income tax expense. See Note 9 for further discussion related to income taxes.

Equity Investments and Business Combinations

For equity investments in other companies, the Company utilizes the cost method of accounting when it does not have the ability to exercise significant influence over the investee. For equity investments where the Company has the ability to exercise significant influence, the Company utilizes the equity method of accounting in accordance with ASC Topic 323, Investments - Equity Method and Joint Ventures.

For business combinations, the Company utilizes the acquisition method of accounting in accordance with ASC Topic 805, Business Combinations. These standards require that the total cost of an acquisition be allocated to the tangible and intangible assets acquired and liabilities assumed based on their respective fair values at the date of acquisition. The allocation of the purchase price is dependent upon certain valuations and other studies. Acquisition costs are expensed as incurred. The Company recognizes separately from goodwill the fair value of assets acquired and the liabilities assumed. Goodwill as of the acquisition date is measured as the excess of consideration transferred and the acquisition date fair values of the assets acquired and liabilities assumed. While the Company uses its best estimates and assumptions as a part of the purchase price allocation process to accurately value assets acquired and liabilities assumed at the acquisition date, the Company's estimates are subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the fair value of the assets acquired and liabilities assumed, with the corresponding offset to goodwill in the period in which the amounts are determined. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the Company's consolidated statements of operations.

Contingent consideration obligations incurred in connection with a business combination are recorded at their fair values on the acquisition date and remeasured at their fair values each subsequent reporting period until the related contingencies are resolved. The resulting changes in fair values are recorded as general and administrative expense in the consolidated statements of operations. Changes in fair values reflect changes to the Company's assumptions regarding probabilities of successful achievement of related milestones, the timing in which the milestones are expected to be achieved, and the discount rate used to estimate the fair value of the obligation. See Note 4 for further discussion.

Goodwill and Other Intangible Assets

Certain intangible assets were acquired as part of a business combination, and have been capitalized at their acquisition date fair value. Acquired definite life intangible assets are amortized using the straight line method over their respective estimated useful lives. The Company evaluates the potential impairment of intangible assets if events or changes in circumstances indicate that the carrying amount of the assets may not be fully recoverable or that the useful lives of these assets are no longer appropriate. Goodwill is not amortized but is evaluated for impairment within the Company's single reporting unit on an annual basis, during the fourth quarter, or more frequently if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of the Company's reporting unit below its carrying amount.

The weighted average amortization period for the total amount of intangible assets is 3.5 years. The Company's definite-lived intangible assets are summarized as follows (in thousands):

| | DECEMBER 31, 2016 | | |
|--------------------------|------------------------|----------------------|-----------|
| | Non-Compete Agreements | Licensing Agreements | Total |
| Gross carrying amount | \$ 11,190 | \$ 2,971 | \$ 14,161 |
| Accumulated amortization | (6,683) | (532) | (7,215) |
| Net intangible assets | \$ 4,507 | \$ 2,439 | \$ 6,946 |

Amortization expense related to intangible assets that is included as operating expenses in the consolidated statements of operations was \$4.2 million, \$3.0 million and \$0 for the years ended December 31, 2016, 2015 and 2014, respectively.

The following table represents the remaining estimated amortization of definite-lived intangible assets as of December 31, 2016 (in thousands):

| Year Ended December 31, | Amortization |
|--------------------------------|---------------------|
| 2017 | \$ 4,027 |
| 2018 | 1,074 |
| 2019 | 297 |
| 2020 | 297 |
| 2021 | 297 |
| 2022 and thereafter | 954 |
| Total | \$ 6,946 |

Property and Equipment

Property and equipment is recorded at historical cost, net of accumulated depreciation, amortization and, if applicable, impairment charges. The Company reviews its property and equipment assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Depreciation is provided over the assets' useful lives on a straight-line basis, generally over a three to seven year time period. Leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or lease terms. See Note 5 for further discussion regarding property and equipment.

Patent Costs

The costs related to acquiring patents and to prosecuting and maintaining intellectual property rights are recorded as general and administrative expense as incurred due to the uncertainty surrounding the drug development process and the uncertainty of future benefits.

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following as of December 31, 2016 and 2015, respectively (in thousands):

| | DECEMBER 31, 2016 | DECEMBER 31, 2015 |
|---|------------------------------|------------------------------|
| Accrued compensation costs | \$ 14,492 | \$ 6,084 |
| Accrued professional and consulting services | 3,632 | 996 |
| Accrued clinical expenses | 4,647 | 999 |
| Accrued research and development costs | 3,215 | 796 |
| Deferred rent, current | 1,163 | 300 |
| Accrued related party costs | 691 | 89 |
| Other | 1,642 | 2,523 |
| Total accrued expenses and other current liabilities | \$ 29,482 | \$ 11,787 |

Revenues

On December 31, 2014, the Company entered into a research and collaboration and license agreement with Amgen, Inc. ("Amgen") to develop and commercialize CAR-based product candidates directed against a number of Amgen cancer targets (the "Amgen Agreement"). As of December 31, 2016, revenue has been limited to a portion of the upfront payment the Company received under the Amgen Agreement, reimbursed research and development costs relating to the Amgen targets and amounts received under a research, development and commercialization agreement with the Leukemia & Lymphoma Society, Inc. ("LLS"); see Note 6 for more information. The Company received an upfront payment of \$60.0 million from Amgen in February 2015. Amgen will fund the research and development costs for all programs with certain limitations through any investigational new drug application ("IND") filing. Each company will then be responsible for clinical development and commercialization of their respective therapeutic candidates, including all related expenses. The Company may be responsible for the manufacturing and processing of Amgen program product candidates for a certain period following the completion of

any Phase 2 clinical trials under a separately negotiated supply agreement, should Amgen choose not to transition manufacturing to itself or to a mutually agreed upon designee of Amgen.

The Company applied the FASB Accounting Standards Update No. 2009-13, Multiple-Deliverable Revenue Arrangements, in evaluating the appropriate accounting for the upfront payment and research funding under the Amgen Agreement. In accordance with this guidance, the Company concluded that the Amgen Agreement should be accounted for as a single unit of accounting and recognize the Amgen Agreement consideration in the same manner as the final deliverable, which is research service. The \$60.0 million upfront payment was recorded as deferred revenue and is being recognized over a four-year period, which is the estimated period of performance for the research service under this agreement. In addition, the Amgen research funding relating to Amgen targets, which is due as the related services are performed under the Amgen Agreement, is recorded as revenue on a time and material basis, with the corresponding cost of revenue recorded as research and development expense in the consolidated statements of operations.

Under certain circumstances, the Company may be required to reimburse Amgen for research and development services for Company targets. The Company will defer the recognition of revenue related to research and development services billed until the potential reimbursement contingency has lapsed. Any costs reimbursed by Amgen that relate to a Company program that progresses to an IND filing are recorded as deferred revenue until either an IND is filed and we are required to reimburse Amgen for such expenses, or the program ends without an IND filing, at which point the revenue would be recognized.

During the year ended December 31, 2016, the Company recognized \$20.0 million of revenue under the Amgen Agreement. As of December 31, 2016, the Company had deferred revenue relating to the Amgen Agreement of \$34.8 million, of which \$3.7 million relates to Kite programs that would be paid back to Amgen in the event that the Kite programs progress to an IND filing.

In the future, the Company may be eligible for development, regulatory and commercial milestone payments under the Amgen Agreement. The Company recognizes revenue related to the milestones under the Amgen Agreement in accordance with the Accounting Standards Codification 605-28, Milestone Method of Revenue Recognition ("ASC 605-28"). At the inception of the arrangement we evaluate whether each milestone is substantive and at risk. This evaluation includes an assessment of whether: (i) the consideration is commensurate with either the Company's performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the Company's performance to achieve the milestone; (ii) the consideration relates solely to past performance; and (iii) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. The Company has concluded that all of the development and regulatory milestones pursuant to its collaboration with Amgen are substantive and at risk. Thus, in accordance with ASC 605-28, revenue will be recognized in its entirety upon successful accomplishment of the milestone, assuming all other revenue recognition criteria are met.

Milestones related to sales-based activities may be triggered upon meeting net sales benchmarks. Under the Amgen Agreement, the achievement of these commercial milestones is solely dependent on Amgen's performance, and there are no continuing performance obligations from the Company. These commercial milestones would be achieved after the completion of the Company's development activities. Revenue from commercial milestone payments will be accounted for as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other staff-related costs, including stock-based compensation, for personnel in executive, commercial, finance, accounting, legal, investor relations, facilities, patent prosecution, business development and human resources functions. Other significant costs include costs relating to preparing for the potential commercial launch of KTE-C19, facilities and overhead costs, sublicense royalties, legal fees relating to corporate and patent matters, insurance, public company expenses relating to maintaining compliance with NASDAQ listing rules and SEC requirements, investor relations costs, fees for accounting and consulting services, and other general and administrative costs. General and administrative costs are expensed as incurred, and the Company accrues for services provided by third parties related to the above expenses by monitoring the status of services provided and receiving estimates from its service providers, and adjusting its accruals as actual costs become known.

Research and Development Expenses

Research and development costs are expensed as incurred. Expenses related to collaborative research and development activities approximate the revenue recognized under these agreements. Research and development costs consist primarily of

salaries, benefits, and other staff-related costs including associated stock-based compensation, laboratory supplies, facilities and overhead costs, clinical trial and related clinical manufacturing costs, costs related to manufacturing preparations, fees paid to other entities that conduct certain research and development activities on our behalf and payments made pursuant to license agreements. Clinical trial and other development costs incurred by third parties are expensed as the contracted work is performed. The Company accrues for costs incurred as the services are being provided by monitoring the status of the trial or project and the invoices received from its external service providers. The Company adjusts its accrual as actual costs become known. Where contingent milestone payments are due to third parties under research and development arrangements or license agreements, the milestone payment obligations are expensed when the milestone results are achieved.

Stock-Based Compensation

Stock-based compensation cost is measured at the grant date based on the fair value of the award and is recognized as expense over the required service period, which is generally equal to the vesting period. Stock-based compensation is recognized only for those awards that are ultimately expected to vest. Common stock, stock options, restricted stock units ("RSUs") and warrants or other equity instruments issued to non-employees, including consultants and members of the Company's Scientific Advisory Board as consideration for goods or services received by the Company, are accounted for based on the fair value of the equity instruments issued unless the fair value of the consideration received can be more reliably measured. The fair value of stock options is determined using the Black-Scholes option-pricing model. The fair value of any awards issued to nonemployees is marked to market each period and recorded as expense over the vesting period. The fair value of an RSU equals the closing price of our common stock on the grant date. Proceeds from options exercised by employees prior to vesting pursuant to an early exercise provision, the related shares of which the Company has the option to repurchase prior to the vesting date should employment of the early exercised option holder be terminated, are recognized as a liability until the shares vest.

Net Loss per Common Share

Basic net loss per share is computed by dividing the net loss attributable to common shareholders by the weighted-average number of common shares outstanding. Diluted net loss per share is computed similarly to basic net loss per share except that the denominator is increased to include the number of additional common shares that would have been outstanding if the potential common shares had been issued and if the additional common shares were dilutive.

The following table sets forth potentially dilutive securities that were excluded from the calculation of diluted net loss per share because including them would have had an anti-dilutive effect for the years ended:

| | DECEMBER 31, | | |
|-----------------------------------|-------------------|------------------|------------------|
| | 2016 | 2015 | 2014 |
| Warrants to purchase common stock | 148,444 | 148,444 | 159,049 |
| Unvested restricted stock units | 749,491 | — | — |
| Unvested early exercise options | 298,758 | 1,091,306 | 2,180,129 |
| Options to purchase common stock | 9,728,030 | 7,393,261 | 5,338,707 |
| Total | <u>10,924,723</u> | <u>8,633,011</u> | <u>7,677,885</u> |

The unvested early exercised options represent stock options that were exercised pursuant to an early exercise provision in the option agreements of certain employees. The Company has the option to repurchase these shares if they do not vest prior to the termination of these employees.

The following table summarizes the calculation of basic and diluted loss per common share for the periods presented (in thousands, except share and per share amounts):

| | YEAR ENDED DECEMBER 31, | | |
|---|-------------------------|---------------------|--------------------|
| | 2016 | 2015 | 2014 |
| Numerator: | | | |
| Net loss | \$ (267,070) | \$ (101,653) | \$ (42,569) |
| Series A preferred stock dividends | — | — | (1,089) |
| Net loss attributable to common shareholders | <u>\$ (267,070)</u> | <u>\$ (101,653)</u> | <u>\$ (43,658)</u> |
| Denominator: | | | |
| Weighted-average common shares outstanding | 49,993,123 | 45,092,207 | 24,513,751 |
| Less: weighted-average unvested common shares subject to repurchase | (1,052,833) | (1,455,555) | (1,691,547) |
| Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted | <u>48,940,290</u> | <u>43,636,652</u> | <u>22,822,204</u> |
| Net loss per common share attributable to common stockholders, basic and diluted | <u>\$ (5.46)</u> | <u>\$ (2.33)</u> | <u>\$ (1.91)</u> |

Recent Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (“FASB”) issued ASU 2014-9, Revenue From Contracts With Customers (Topic 606), amended by ASU 2015-14 which supersedes most current revenue recognition guidance, including industry-specific guidance. The new standard provides that an entity recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 defines a five-step process to achieve this core principle and, in doing so, it is possible more judgment and estimates may be required within the revenue recognition process than are required under existing GAAP, including identifying performance obligations in a contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. The new standard allows for two methods of adoption: (a) full retrospective adoption, meaning the standard is applied to all periods presented, or (b) modified retrospective adoption, meaning the cumulative effect of applying the new standard is recognized as an adjustment to the opening retained earnings balance. The guidance becomes effective on January 1, 2018 and early adoption is permitted. The Company expects to adopt ASU 2014-09 in the first quarter of 2018 and is currently determining the transition method it will adopt.

The adoption of ASU 2014-09 may have a material effect on our financial statements. To date, we have derived our revenues from a limited number of license and collaboration agreements. The consideration we are eligible to receive under these agreements includes upfront payments, research and development funding, milestone payments and royalties. Each of our license and collaboration agreements has unique terms that will need to be evaluated separately under the new standard. We have started our preliminary assessment of our active license and collaboration agreements. ASU 2014-09 differs from the current accounting standard in many respects, such as in the accounting for variable consideration, including milestone payments. Accordingly, we expect that our evaluation of the accounting for collaboration agreements under the new revenue standard could identify material changes from the current accounting treatment. For example, we currently recognize milestone revenue using the milestone method specified in ASC 605-28, which generally results in the recognition of milestone revenue in the period that the milestone event is achieved. However, under the new accounting standard, it is possible to start to recognize milestone revenue before the milestone is achieved if management determines with a high degree of certainty that amounts recorded as revenues will not have to be reversed when the uncertainty associated with the variable consideration is subsequently resolved. In addition, the current accounting standards include a presumption that revenue from upfront non-refundable fees are recognized ratably over the performance period, unless another attribution method is determined to more closely approximate the delivery of the goods or services to the customer. The new accounting standard will require entities to determine an appropriate attribution method using either output or input methods and does not include a presumption that entities would default to a ratable attribution approach. These factors could materially impact the amount and timing of our revenue recognition from our license and collaboration agreements under the new revenue standard.

In January 2016, the FASB issued ASU 2016-01, Financial Instruments, which amends the accounting and disclosures of financial instruments and includes a provision that equity investments not accounted for

under the equity method of accounting to be measured at fair value, with changes in fair value recognized in current earnings. This standard becomes effective on January 1, 2018 and early adoption is permitted. The Company does not believe the adoption of this standard will have a material impact on its financial position or results of operations.

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In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires lessees to recognize almost all leases on their balance sheet as a right-of-use asset and a lease liability. Lessees are required to be classified as either operating or finance on the income statements based on criteria that are largely similar to those applied in current lease accounting. The guidance becomes effective on January 1, 2019 and early adoption is permitted. The Company is currently evaluating the impact that the adoption of this update will have on its consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-7, Investments - Equity Method and Joint Ventures (Topic 323). The new standard no longer requires that when an investment qualifies for use of the equity method as a result of an increase in the level of ownership interest or degree of influence, an adjustment must be made to the investment, results of operations and retained earnings retroactively on a step-by-step basis as if the equity method had been in effect during all previous periods that the investment had been held. The Company elected to early adopt the new standard during the quarter ended June 30, 2016 and the adoption of this standard did not have a material impact on the Company's financial position or results of operations.

In March 2016, the FASB issued ASU 2016-09, Compensation - Stock Compensation (Topic 718), to simplify various aspects of the accounting for share-based payments, which provides that all of the tax effects related to share-based payments are recorded as part of the provision for income taxes, allows entities to withhold an amount up to the employees' maximum individual tax rate in the relevant jurisdiction, allows entities to estimate the effect of forfeitures or recognized forfeitures when they occur, amends the presentation of the excess tax benefits from employee share-based payments to be included in cash flows from operating activities instead of cash flows from financing activities as under previous guidance, as well as that the cash paid to taxing authorities arising from the withholding of shares from employees be included in cash flows from financing activities instead of cash flows from operating activities as under previous guidance. This standard becomes effective for fiscal years beginning after December 15, 2016 and interim periods within those annual periods. Early adoption is permitted, and the Company elected to adopt this standard during the three months ended March 31, 2016. Since the Company has incurred net losses since its inception and maintains a full valuation allowance on its net deferred tax assets, adoption of the new guidance had no significant impact on the Company's consolidated financial statements or its cash flow presentation for the years ended December 31, 2016 and 2015.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments, which (i) significantly changes the impairment model for most financial assets that are measured at amortized cost and certain other instruments from an incurred loss model to an expected loss model; and (ii) provides for recording credit losses on available-for-sale (AFS) debt securities through an allowance account. The guidance becomes effective on January 1, 2020. The Company is currently evaluating the potential impact this update may have on its financial position and results of operations.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230), which provides greater clarity to preparers on the treatment of certain items within an entity's statement of cash flows. The new guidance is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. The guidance becomes effective on January 1, 2018 and early adoption is permitted. The Company elected to adopt the new standard during the quarter ended September 30, 2016. The early adoption of this standard did not have a material impact on the Company's financial position or results of operations.

In October 2016, the FASB issued ASU 2016-16, Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory, which changes the accounting for income tax effects of intra-entity transfers of assets other than inventory. Under the new guidance, entities should recognize the income tax consequences on an intra-entity transfer of an asset other than inventory when the transfer occurs. The guidance becomes effective on January 1, 2018 and early adoption is permitted. The Company is currently evaluating the potential impact this guidance may have on its financial position and results of operations.

In November 2016, the FASB issued ASU 2016-16, Statement of Cash Flows (Topic 230): Restricted Cash, which require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents and when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The guidance becomes effective on January 1, 2018 and early adoption is permitted. The Company expects to adopt this standard in the first quarter of 2018 and does not expect the adoption of this standard to have a material impact on its financial position or results of operations.

NOTE 4—FAIR VALUE MEASUREMENTS AND INVESTMENTS IN MARKETABLE SECURITIES

The Company follows authoritative accounting guidance, which among other things, defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability.

As a basis for considering such assumptions, a three-tier fair value hierarchy has been established, which prioritizes the inputs used in measuring fair value as follows:

- Level 1: Observable inputs such as quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.
- Level 3: Unobservable inputs that reflect the reporting entity's own assumptions.

The carrying amounts of the Company's prepaid expenses, other current assets, accounts payable and accrued liabilities are generally considered to be representative of their fair value because of the short term nature of these instruments. No transfers between levels have occurred during the periods presented.

Assets and liabilities measured at fair value on a recurring basis based on Level 1, Level 2, and Level 3 fair value measurement criteria as of December 31, 2016 are as follows (in thousands):

| | Fair Value Measurements Using | | | |
|--|---------------------------------|--|---|---|
| | Balance as of December 31, 2016 | Quoted Prices in Active Markets for Identical Assets (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) |
| Assets: | | | | |
| Restricted cash | \$ 3,662 | \$ 3,662 | \$ — | \$ — |
| Money market funds ⁽¹⁾ | 82,364 | 82,364 | — | — |
| Commercial paper | 1,500 | — | 1,500 | — |
| Corporate debt securities | 131,061 | — | 131,061 | — |
| Government sponsored entities and U.S. Treasuries ⁽²⁾ | 174,307 | — | 174,307 | — |
| Total | \$ 392,894 | \$ 86,026 | \$ 306,868 | \$ — |
| Liabilities: | | | | |
| Contingent consideration | \$ 14,218 | \$ — | \$ — | \$ 14,218 |

(1) Included within cash and cash equivalents on the Company's consolidated balance sheets.

(2) \$7.0 million of government-related debt securities have been pledged against a letter of credit to secure a lease agreement entered in November 2016. See Note 11 for further discussion.

Assets and liabilities measured at fair value on a recurring basis based on Level 1, Level 2, and Level 3 fair value measurement criteria as of December 31, 2015 are as follows (in thousands):

| | Balance as of December 31, 2015 | Fair Value Measurements Using | | |
|---|---------------------------------|--|---|---|
| | | Quoted Prices in Active Markets for Identical Assets (Level 1) | Significant Other Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) |
| Assets: | | | | |
| Restricted cash | \$ 1,540 | \$ 1,540 | \$ — | \$ — |
| Money market funds ⁽¹⁾ | 54,854 | 54,854 | — | — |
| Corporate debt securities | 116,935 | — | 116,935 | — |
| Government sponsored entities and U.S. Treasuries | 104,944 | — | 104,944 | — |
| Total | \$ 278,273 | \$ 56,394 | \$ 221,879 | \$ — |
| Liabilities: | | | | |
| Contingent consideration | \$ 16,080 | \$ — | \$ — | \$ 16,080 |

(1) Included within cash and cash equivalents on the Company's consolidated balance sheets.

The Company's investments in money market funds are valued based on publicly available quoted market prices for identical securities as of December 31, 2016. The Company determines the fair value of corporate bonds and other government-sponsored enterprise related securities with the aid of valuations provided by third parties using proprietary valuation models and analytical tools. These valuation models and analytical tools use market pricing or prices for similar instruments that are both objective and publicly available, including matrix pricing or reported trades, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids and/or offers.

Additionally, in connection with the acquisition of Kite Pharma EU, the Company has agreed to pay additional amounts based on the achievement of certain milestones. This contingent consideration obligation is recorded at its estimated fair value, and is revalued at each reporting period until the related contingency is resolved. The fair value measurements of this obligation are based on significant inputs not observable in the market (a Level 3 measurement within the fair value hierarchy) and are reviewed periodically by management. These inputs include the estimated probabilities and timing of achieving specified development and sales milestones, as well as the discount rate used to determine the present value of these milestones. Contingent consideration may change significantly as development progresses and additional data are obtained. Significant changes that would increase or decrease the probabilities or timing of achieving the development and sales milestones would result in a corresponding increase or decrease in the fair value of the contingent consideration obligations, which would be recognized in general and administrative expense in the consolidated statements of operations.

During the year ended December 31, 2016 the Company recognized an expense of \$0.9 million as a general and administrative expense related to the change in the fair value of the contingent consideration. During the year ended December 31, 2015, the Company recorded \$0.6 million related to the change in the fair value of the contingent consideration, which was based on the passage of time, as interest expense. This amount has been reclassified to general and administrative expense to conform to the current year presentation.

The table below sets forth a summary of the changes in the fair value of the Company's contingent consideration liability for the year ended December 31, 2016 (in thousands):

| | Balance at December 31, 2015 | Recorded contingent liability payment | Change in estimated fair value recognized in results of operations | Gross change related to foreign currency | Balance at December 31, 2016 |
|----------------------|------------------------------|---------------------------------------|--|--|------------------------------|
| Contingent Liability | \$ 16,080 | \$ (2,259) | \$ 853 | \$ (456) | \$ 14,218 |

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Investments classified as available-for-sale at December 31, 2016 consisted of the following (in thousands):

| | Maturity (in years) | Amortized Cost | Gross Unrealized Gains | Gross Unrealized Losses | Aggregate Estimated Fair Value |
|---|---------------------|-------------------|------------------------|-------------------------|--------------------------------|
| Marketable Securities: | | | | | |
| Commercial paper | 1 year or less | \$ 1,500 | \$ — | \$ — | \$ 1,500 |
| Corporate debt securities | 1 year or less | 69,511 | 8 | (57) | 69,462 |
| Corporate debt securities | 1-2 years | 40,241 | 28 | (124) | 40,145 |
| Corporate debt securities | More than 2 years | 21,744 | — | (290) | 21,454 |
| Government sponsored entities and U.S. Treasuries | 1 year or less | 66,552 | 3 | (17) | 66,538 |
| Government sponsored entities and U.S. Treasuries | 1-2 years | 61,973 | 5 | (122) | 61,856 |
| Government sponsored entities and U.S. Treasuries | More than 2 years | 39,110 | — | (204) | 38,906 |
| Total available-for-sale securities | | \$ 300,631 | \$ 44 | \$ (814) | \$ 299,861 |

Investments classified as available-for-sale at December 31, 2015 consisted of the following (in thousands):

| | Maturity (in years) | Amortized Cost | Gross Unrealized Gains | Gross Unrealized Losses | Aggregate Estimated Fair Value |
|---|---------------------|-------------------|------------------------|-------------------------|--------------------------------|
| Marketable Securities: | | | | | |
| Commercial paper | 1 year or less | \$ 58,826 | \$ 2 | \$ (78) | \$ 58,750 |
| Corporate debt securities | 1 year or less | 36,977 | 9 | (86) | 36,900 |
| Corporate debt securities | 1-2 years | 21,372 | 2 | (89) | 21,285 |
| Government sponsored entities and U.S. Treasuries | 1 year or less | 57,059 | 3 | (59) | 57,003 |
| Government sponsored entities and U.S. Treasuries | 1-2 years | 29,174 | — | (88) | 29,086 |
| Government sponsored entities and U.S. Treasuries | More than 2 years | 18,949 | — | (94) | 18,855 |
| Total available-for-sale securities | | \$ 222,357 | \$ 16 | \$ (494) | \$ 221,879 |

The Company has classified all of its available-for-sale investment securities, including those with maturities beyond one year, as current assets on the accompanying consolidated balance sheets based on the highly liquid nature of these investment securities and because these investment securities are considered available for use in current operations.

The Company recognizes realized gains or losses on sales of available-for-sale securities as other income (expense), net. Unrealized gains and losses on available-for-sale securities are included as a component of comprehensive loss. At December 31, 2016, the aggregate fair value of securities held by the Company in an unrealized loss position was \$229.9 million, which consisted of 118 securities. Of these securities, two securities have been in an unrealized loss position for more than twelve months, but have an aggregate unrealized loss of less than \$2,000.

The Company reviews its available-for-sale securities for other-than-temporary declines in fair value below its cost basis each quarter and whenever events or changes in circumstances indicate that the cost basis of an asset may not be recoverable. This evaluation is based on a number of factors include the length of time and extent to which fair value has been less than the cost basis and adverse conditions related specifically to the security, and the intent to sell, or whether the Company will more likely than not be required to sell, the security before recovery of its amortized cost basis. The Company's assessment of whether a security is other-than-temporarily impaired could change in the future due to new developments or changes in assumptions related to any particular security. At December 31, 2016 and 2015, the Company believes its cost basis for its available-for-sale investments were recoverable in all material aspects.

NOTE 5—PROPERTY AND EQUIPMENT

Property and equipment, consists of the following as of December 31, 2016 and 2015 (in thousands):

| | DECEMBER 31, 2016 | DECEMBER 31, 2015 |
|---|------------------------------|------------------------------|
| Laboratory equipment | \$ 19,000 | \$ 9,392 |
| Computer equipment and software | 5,380 | 1,715 |
| Office equipment and furniture | 2,747 | 1,918 |
| Leasehold improvements | 25,140 | 3,595 |
| Construction in progress | 135 | 15,314 |
| | <hr/> | <hr/> |
| | 52,402 | 31,934 |
| Less: accumulated depreciation and amortization | (7,993) | (1,818) |
| Property and equipment, net | <hr/> | <hr/> |
| | \$ 44,409 | \$ 30,116 |

Depreciation and amortization expense was \$6.4 million, \$1.7 million and \$0.3 million for the years ended December 31, 2016, 2015 and 2014, respectively. Amortization related to assets under capital leases were included in the depreciation and amortization expense noted above. The net book value of assets under capital leases at December 31, 2016 and 2015 was \$0.2 million and \$0.2 million, respectively, net of accumulated depreciation of \$0.3 million and \$0.1 million, respectively.

NOTE 6—LICENSE AND COLLABORATION AGREEMENTS

2012 National Cancer Institute ("NCI") Cooperative Research and Development Agreement

In August 2012, the Company entered into a Cooperative Research and Development Agreement (the "CRADA") with the U.S. Department of Health and Human Services, as represented by the NCI for the research and development of novel engineered peripheral blood autologous T cell therapeutics for the treatment of multiple cancer indications.

The CRADA had a five-year term commencing August 31, 2012 and expiring on August 30, 2017. On February 24, 2015, the Company amended the CRADA by expanding the research plan to include (1) the research and development of the next generation of TCR-based product candidates that are engineered to recognize neo-antigens, which are specific to the unique genetic profile of a patient's own tumor, (2) the optimization of new methods to manufacture this next generation of TCR-based product candidates and (3) the advancement of CAR-based product candidates for the treatment of clear cell renal cell carcinoma and TCR-based product candidates for the treatment of certain epithelial tumors such as lung and colorectal cancer. To support the additional research activities under the amended CRADA, beginning in the first quarter of 2015, the Company's quarterly payments to the NCI increased from \$250,000 to \$750,000. Total expenses recognized under the CRADA were \$3.0 million, \$2.7 million and \$1.0 million for the years ended December 31, 2016, December 31, 2015 and 2014, respectively.

Pursuant to the terms of the CRADA, the Company has agreed to hold the NCI harmless and to indemnify the NCI from all liabilities, demands, damages, expenses and losses arising out of the Company's use for any purpose of the data generated, materials produced or inventions discovered in whole or in part by NCI employees under the CRADA, unless due to their negligence or willful misconduct. The CRADA may be terminated at any time upon the mutual written consent of the Company and NCI. The Company or NCI may unilaterally terminate the CRADA at any time by providing written notice at least 60 days before the desired termination date.

Pursuant to the terms of the CRADA, the Company has an option to elect to negotiate an exclusive or nonexclusive commercialization license to any inventions discovered in the performance of the CRADA, whether solely by an NCI employee or jointly with a Company employee for which a patent application has been filed.

The parties jointly own any inventions and materials that are jointly produced by employees of both parties in the course of performing activities under the CRADA.

Cabaret License Agreement

On December 12, 2013, the Company entered into an exclusive, worldwide license agreement, including the right to grant sublicenses, with Cabaret Biotech Ltd. ("Cabaret") and Dr. Zelig Eshhar relating to certain intellectual property and know-how (the "Licensed IP") owned or controlled by Cabaret (the "Cabaret

License") for use in the treatment of oncology and such other fields as may be agreed to by the parties. Should Cabaret propose to enter into an agreement with a third party relating to the

use of the Licensed IP outside of oncology ("Additional Indications"), then Cabaret shall notify the Company in writing and the Company shall have a 60-day right of first negotiation to acquire a license to the Licensed IP in such Additional Indications.

Pursuant to the Cabaret License, the Company shall be required to make cash milestone payments upon successful completion of certain clinical and regulatory milestones in the United States and certain major European countries relating to each product covered by the Cabaret License (each, a "Cabaret Licensed Product"). The aggregate potential milestone payments are \$3.9 million for each of the first two Cabaret Licensed Products, of which \$3.0 million is due only after marketing approval in the United States and at least one major European country. Thereafter, for each subsequent Cabaret Licensed Product such aggregate milestone payments shall be reduced to \$2.7 million. The Company has also agreed to pay Cabaret royalties on net sales of Cabaret Licensed Products at rates in the mid-single digits. To the extent the Company enters into a sublicensing agreement relating to a Cabaret Licensed Product, the Company is required to pay Cabaret a percentage of all non-royalty income received as well as payment on Cabaret's behalf of any applicable taxes due, which percentage will decrease based upon the stage of development of the Cabaret Licensed Product at the time of sublicensing.

The Company has agreed to defend, indemnify and hold Dr. Eshhar, Cabaret, its affiliates, directors, officers, employees and agents, and if applicable certain other parties, harmless from all losses, liabilities, damages and expenses (including attorneys' fees and costs) incurred as a result of any claim, demand, action or proceeding to the extent resulting from (a) any breach of the Cabaret License by the Company or its sublicensees, (b) the gross negligence or willful misconduct of the Company or its sublicensees in the performance of its obligations under this Cabaret License, or (c) the manufacture, development, use or sale of Cabaret Licensed Products by the Company or its sublicensees, except in each case to the extent arising from the gross negligence or willful misconduct of Cabaret or Dr. Eshhar or the breach of this Agreement by Dr. Eshhar or Cabaret.

The Cabaret License expires on a product-by-product and country-by-country basis on the date on which the Company, its affiliates and sublicensees permanently cease to research, develop, sell and commercialize the Cabaret Licensed Products in such country. Either party may terminate the Cabaret License in the event of a material breach of the agreement that remains uncured following the date that is 60 days from the date that the breaching party is provided with written notice by the non-breaching party. Additionally, the Company may terminate the Cabaret License at its sole discretion at any time upon 30 days written notice to Cabaret and Dr. Eshhar.

Due to the receipt of the \$60.0 million upfront license payment from Amgen in connection with the Amgen Agreement, in April 2015 the Company paid \$13.8 million to Cabaret as a sublicense fee, which includes \$1.8 million of applicable taxes paid on Cabaret's behalf as required under the Cabaret License. As of December 31, 2016, a \$3.5 million deferred asset was recorded under the other current assets caption on the consolidated balance sheets, and a \$3.7 million non-current deferred asset was recorded under the other assets caption of the consolidated balance sheets. Both of these amounts will be recognized as sublicense fee expense within general and administrative expense on a straight line basis over the same period as the recognition of the upfront license payment from the Amgen agreement. For the year ended December 31, 2016 and 2015, the Company recorded \$3.5 million and \$3.2 million in sublicense fee expense related to the Cabaret license, respectively.

The expenses recognized in connection with the Cabaret License were \$4.0 million, \$3.7 million and \$25,000 for the years ended December 31, 2016, 2015 and 2014, respectively.

December 2014 National Institutes of Health ("NIH") License Agreement

Pursuant to a patent license agreement with the NIH, dated December 31, 2014, the Company holds an exclusive, worldwide license to certain intellectual property related to TCR-based product candidates that target HPV antigens E6 and E7 of the HPV subtype 16.

Pursuant to the terms of this license, the Company paid the NIH a cash payment in the aggregate amount of \$350,000 in February 2015. The Company is required to make performance-based payments upon successful completion of clinical and regulatory benchmarks relating to the licensed products. The aggregate potential benchmark payments for each licensed product are \$6.0 million, of which aggregate payments of \$5.0 million are due only after marketing approval in the United States or in Europe, Japan, China or India. The first benchmark payment of \$50,000 will be due upon the commencement of the Company's first sponsored Phase 1 clinical trial.

In addition, the Company is required to pay the NIH one-time benchmark payments following aggregate net sales of up to \$1.0 billion of licensed products. The aggregate potential amount of these benchmark payments is \$7.0 million. The Company must also pay the NIH royalties on net sales of products covered by this license at rates in the mid-single digits. To the extent the Company enters into a sublicensing agreement relating to a licensed product, the Company is required to pay the NIH a

percentage of all consideration received from a sublicensee, which percentage will decrease based on the stage of development of the licensed product at the time of the sublicense. Any such sublicense payment is subject to a certain cap.

The license will expire upon expiration of the last patent contained in the licensed patent rights, unless terminated earlier. None of the applications included in the NIH licensed patent rights have issued yet. Any patents issuing from these applications will have a base expiration date no earlier than 2034. The NIH may terminate or modify the license in the event of a material breach, including if the Company does not meet certain milestones by certain dates, or upon certain insolvency events that remain uncured following the date that is 90 days following written notice of such breach or insolvency event. The Company may terminate the license, or any portion thereof, at its sole discretion at any time upon 60 days written notice to the NIH. In addition, the NIH has the right to require the Company to sublicense the rights to the product candidates covered by the license upon certain conditions, including if the Company is not reasonably satisfying required health and safety needs or if the Company is not satisfying requirements for public use as specified by federal regulations.

October 2015 NIH License Agreement

Pursuant to a patent license agreement with the NIH, dated October 1, 2015, the Company holds an exclusive, worldwide license to certain intellectual property related to TCR-based product candidates directed against MAGE A3 and A3/A6 antigens for the treatment of tumors expressing MAGE. Pursuant to the terms of this license, the Company paid the NIH a cash payment in the aggregate amount of \$1.2 million in November 2015.

The Company is also required to make performance-based payments upon successful completion of clinical and regulatory benchmarks relating to the licensed products. The aggregate potential benchmark payments for each licensed product are \$8.4 million, of which aggregate payments of \$6.0 million are due only after marketing approval in the United States or in Europe, Japan, China or India. Also, a benchmark payment of \$150,000 will be due upon the commencement of the Company's first sponsored Phase 1 clinical trial for each licensed product in each indication.

In addition, the Company is required to pay the NIH one-time benchmark payments following aggregate net sales of up to \$1.0 billion of licensed products. The aggregate potential amount of these benchmark payments is \$12.0 million. The Company must also pay the NIH royalties on net sales of products covered by this license at rates in the mid-single digits. To the extent the Company enters into a sublicensing agreement relating to a licensed product, the Company is required to pay the NIH a percentage of all consideration received from a sublicensee, which percentage will decrease based on the stage of development of the licensed product at the time of the sublicense. Any such sublicense payment is subject to a certain cap.

The license will expire upon expiration of the last patent contained in the licensed patent rights, unless terminated earlier. None of the applications included in the NIH licensed patent rights have issued yet. Any patents issuing from these applications will have a base expiration date no earlier than 2032. The NIH may terminate or modify the license in the event of a material breach, including if the Company does not meet certain milestones by certain dates, or upon certain insolvency events that remain uncured following the date that is 90 days following written notice of such breach or insolvency event. The Company may terminate the license, or any portion thereof, at its sole discretion at any time upon 60 days written notice to the NIH. In addition, the NIH has the right to require the Company to sublicense the rights to the product candidates covered by the license upon certain conditions, including if the Company is not reasonably satisfying required health and safety needs or if the Company is not satisfying requirements for public use as specified by federal regulations.

Amgen Research Collaboration and License Agreement

On December 31, 2014, the Company entered into the Amgen Agreement, pursuant to which the Company and Amgen expect to develop and commercialize CAR-based product candidates directed against a number of Amgen cancer targets. Under the terms of the Amgen Agreement, the Company and Amgen will jointly create preclinical development plans through IND filing with the FDA for the research and development of CAR-based product candidates that target certain antigens expressed on the cell surface of various cancers. The Company and Amgen expect to progress multiple Amgen programs, each consisting of the development of one or more CAR-based product candidates directed against a certain Amgen selected cancer target. The Company and Amgen also expect to progress multiple Company programs, each consisting of the development of one or more CAR-based product candidates directed against a certain

Company selected cancer target. Under certain circumstances, the collaboration may be expanded to include the research and development of other product candidates.

The Company received an upfront payment of \$60.0 million from Amgen in February 2015 as partial consideration for the rights granted to Amgen by the Company for access to the Company platform technology and the Company undertaking preclinical development under certain programs. Amgen will fund the research and development costs for all programs with certain limitations through any IND filing. The Company will reimburse Amgen for the research and development costs for any Company program that progresses to an IND filing, to the extent that Amgen had previously paid the Company for any such research and development costs. Each party will then be responsible for clinical development and commercialization of their respective therapeutic candidates, including all related expenses.

The Company will be responsible for the manufacturing and processing of Amgen program product candidates for a certain period following the completion of any Phase 2 clinical trials under a separately negotiated supply agreement, should Amgen choose not to transition manufacturing to itself or to a mutually agreed upon designee of Amgen. The Company will be eligible to receive up \$100.0 million milestone payment upon receipt of the first marketing approval for the first Amgen product from each Amgen program to achieve approval and up to \$425.0 million in commercial milestone payments for each Amgen program, based on the Amgen program products meeting certain net sales benchmarks in a calendar year, plus tiered high single to low double digit royalties for sales and the license of the Company's intellectual property for CAR-based product candidates. Amgen will be eligible to receive a \$100 million milestone payment upon receipt of the first marketing approval for the first Company product from each Company program to achieve approval and up to \$425.0 million in commercial milestone payments for each Company program, based on the Company program products meeting certain net sales benchmarks in a calendar year, plus tiered single digit sales royalties. The Company does not expect any milestones to be achieved or paid until 2021 at the earliest, as all of the collaboration product candidates are currently in the pre-clinical stage.

In addition, Amgen has a one-time option to convert a Company program to an Amgen program for a fee of \$35.0 million at any time on or prior to the 60th day after the later of (a) delivery of a final report with data for use in an IND and (b) filing of the IND for a Company product candidate from a Company program and delivery of such IND to Amgen. This option shall exclude the first and second Company programs for which the Company has filed an IND on the Company program product candidate. In addition to the milestones described above that would be applicable to the converted Company program, the Company shall be eligible to receive additional milestones of \$50.0 million upon the initiation of the first Phase 3 clinical trial for the first product from the converted Company program and \$50.0 million upon receipt of marketing approval for a second indication from the converted Company program.

The term of the Amgen Agreement will continue on a target-by-target basis until the later of (1) the date on which the product candidates directed against the target are no longer covered by certain intellectual property rights, (2) the loss of certain regulatory exclusivity and (3) a defined term from the first commercial sale of the first product candidate directed against the target. Either party may terminate the agreement on a target-by-target basis with respect to its own programs with prior written notice. Either party may also terminate the agreement with written notice upon material breach by the other party, if such breach has not been cured within a defined period of receiving such notice.

During the years ended December 31, 2016 and 2015, the Company recognized \$20.0 million and \$17.1 million of revenue under the Amgen Agreement, respectively. As of December 31, 2016, the Company had deferred revenue relating to the Amgen Agreement of \$34.8 million, of which \$3.7 million relates to Kite programs that would be paid back to Amgen in the event that the Kite programs progress to an IND filing.

LLS Research, Development and Commercialization Agreement

On June 30, 2015, the Company and LLS entered into a research, development and commercialization agreement to enhance the development of the Company's lead product candidate, KTE-C19. Under the agreement, LLS agreed to contribute up to \$2.5 million through its Therapy Acceleration Program to help fund the Company's Phase 1-2 clinical trial of KTE-C19.

LLS paid the Company \$1.5 million during 2015, and an additional \$0.8 million during 2016. Certain regulatory and commercial milestone payments will be made to LLS, based on the development progress of KTE-C19, or upon certain other events, including the out-licensing to a third party of the rights to develop or commercialize KTE-C19, or if the Company combines with or is sold to another company.

The Company considers its agreement with LLS to be a revenue arrangement with multiple deliverables. The Company determined that the substantive deliverables are limited to the clinical development of KTE-C19, Research Advisory Committee ("RAC") participation, and participating in LLS activities, which together represented a single unit of accounting. The Company deemed that the participation on the RAC is tied to

the development of KTE-C19 and occurs concurrently with the research and development services. Participation on the RAC does not have a separate and stand-alone value, as it is essential to

the development of KTE-C19 and the Company has sole responsibility for the research and development activities. Participation in activities for LLS are not considered to have a significant value to LLS as the participation is limited to two times per calendar year and the expected value is immaterial. The Company recorded \$2.1 million, \$0.2 million, and \$0 in revenue under the LLS agreement related to the research and development activities and achievement of clinical milestones for the years ended December 31, 2016, 2015, and 2014, respectively.

Alpine Immune Sciences, Inc. ("AIS") License and Research Agreement

On October 26, 2015, the Company and AIS entered into an exclusive, worldwide license and research agreement to research, develop, and commercialize engineered autologous T cell therapies incorporating two programs from AIS' transmembrane immunomodulatory protein ("TIP™") technology.

Under the terms of the Agreement, AIS will conduct initial research to deliver two program TIPs with certain pre-defined characteristics. The Company will then conduct further research on the program TIPs with the goal of demonstrating proof-of-concept. If successful, the Company would further engineer the program TIPs into certain CAR and TCR product candidates that would potentially enhance anti-tumor response.

Pursuant to the Agreement, the Company paid AIS a \$5.0 million upfront payment. The Company also paid \$0.5 million in additional payments to support AIS' research. The Company recorded \$4.4 million to research and development expense which includes \$0.5 million as a accrued liability that was recognized as research and development expense for certain research and development activities which were performed during the year ended December 31, 2016. AIS will be eligible to receive up to \$530.0 million in total milestone payments based on the successful completion of research, clinical and regulatory milestones relating to both program TIPs. At the Company's option, a portion of the milestones may be paid in shares of the Company's common stock. AIS will also be eligible to receive a low single digit royalty for sales on a licensed product-by-licensed product and country-by-country basis, until the later of (i) the date on which the licensed product is no longer covered by certain intellectual property rights, and (ii) a defined term from the first commercial sale of the licensed product.

The Company may terminate the agreement with prior written notice after a defined research term. Either party may also terminate the agreement upon certain insolvency events of the other party, or with written notice upon material breach by the other party, if such breach has not been cured within a defined period of receiving such notice.

Cell Design Labs, Inc. ("Cell Design Labs") Research Collaboration and License Agreement

On June 1, 2016, the Company entered into a Research Collaboration and License Agreement with Cell Design Labs for the development of next generation CAR-based product candidates that incorporate Cell Design Labs' molecular "on/off switch" technology.

Under the terms of the agreement, Cell Design Labs is responsible for developing the "on/off switches" for the Company's CAR T cell pipeline. The Company has exclusive worldwide rights to develop and commercialize CAR-based product candidates containing Cell Design Labs' "on/off switches" directed to certain targets that are associated with acute myeloid leukemia. The Company also has the exclusive option for a pre-defined period to develop and commercialize CAR-based product candidates containing "on/off switches" directed to certain targets that are associated with B-cell malignancies. See Note 10 for further discussion.

NOTE 7—STOCKHOLDERS' EQUITY

In April 2014, the Company entered into a note purchase agreement with investors for the sale of an aggregate of \$50.0 million of convertible promissory notes (the "2014 Notes"). The 2014 Notes accrued interest at a rate of 6.0% per annum. Pursuant to the 2014 Notes agreement, in a qualified initial public offering the 2014 Notes, including interest thereon, would automatically convert into a number of shares of common stock at a per share conversion price equal to (1) 90% of the initial public offering price, if the qualified initial public offering occurred prior to December 31, 2014. In June 2014, as a result of the IPO, the \$50.0 million principal amount of the 2014 Notes plus accrued interest of approximately \$0.5 million automatically converted into 3,300,735 shares of the Company's common shares at a conversion price of \$15.30 per share which was a discount of 10% to the initial offering price of \$17.00. The Company recognized a charge to interest expense and additional paid-in capital of \$5,611,725 related to this beneficial conversion feature at the time of conversion.

The Company completed its initial public offering ("IPO") in June 2014, pursuant to which it issued 8,625,000 shares of common stock, which included shares issued pursuant to the underwriters' full exercise

of their option to purchase 1,125,000 additional shares, and received net proceeds of \$134.1 million, after underwriting discounts, commissions and offering

expenses. In addition, in connection with the completion of the IPO, all then outstanding convertible preferred stock and accrued dividends, and convertible notes and accrued interest thereon converted into 23,694,641 shares of common stock.

As a result of the IPO completed in June 2014, 20,315,397 Series A Preferred Shares which were then outstanding converted into an equivalent number of shares of the Company's common stock on a one-to-one basis. In addition, the Company issued 78,509 shares of its common stock in satisfaction of \$2,524,894 in related accrued dividends, which was based on the price of the Company's stock on the date of the closing of the IPO. Upon the completion of the IPO, all outstanding warrants to purchase Series A convertible preferred stock converted into warrants to purchase 159,049 shares of common stock at an exercise price of \$2.04. As of December 31, 2016, warrants to purchase 148,444 shares of common stock remain outstanding and are exercisable until May 2018. See Note 10 for further discussion.

In December 2014, the Company completed its follow-on offering and sold an additional 3,485,000 shares of its common stock at a price of \$54.00 per share. As a result of the follow-on offering, the Company raised a total of approximately \$177.1 million in net proceeds after deducting underwriting discounts and commissions of \$10.8 million and offering expenses of \$0.3 million. Costs directly associated with the follow-on offering were capitalized and recorded as deferred offering costs prior to the completion of the follow-on offering. These costs have been recorded as a reduction of the proceeds received from the follow-on offering.

As part of the follow-on public offering, in January 2015, the Company sold an additional 522,750 shares of its common stock at a price of \$54.00 per share pursuant to the underwriters' exercise in full of their overallotment option. As a result, the total number of shares sold in the follow-on public offering was 4,007,750 shares, and the Company raised a total of approximately \$203.7 million in net proceeds after deducting the underwriting discount and commission of \$12.4 million and offering expenses of \$0.3 million. These costs have been recorded as a reduction of the proceeds received from the follow-on offering.

In December 2015, the Company completed an additional follow-on offering and sold an additional 4,168,750 shares of its common stock (inclusive of 543,750 shares of common stock sold by the Company pursuant to the full exercise of an overallotment option granted to the underwriters in connection with the offering) at a price of \$69.00 per share. As a result of this offering, the Company raised a total of approximately \$272.6 million in net proceeds after deducting underwriting discounts and commissions of \$14.4 million and offering expenses of \$0.7 million. Costs directly associated with the offering were capitalized and recorded as deferred offering costs prior to the completion of the follow-on offering. These costs have been recorded as a reduction of the proceeds received from the follow-on offering.

NOTE 8—STOCK BASED COMPENSATION

Employee Stock Purchase Plan

Under the 2014 Employee Stock Purchase Plan ("ESPP"), employees can purchase shares of our common stock based on a percentage of their compensation subject to certain limits. The purchase price per share is equal to the lower of 85% of the fair market value of our common stock on the offering date or the purchase date. The ESPP offers a two-year look-back feature as well as an automatic reset feature that provides for an offering period to be reset to a new lower-priced offering if the offering price of the new offering period is less than that of the current offering period. ESPP purchases are settled with common stock from the ESPP's authorized and available pool of shares.

At inception of the ESPP in June 2014, 360,000 shares of our common stock may be sold pursuant to purchase rights under the ESPP, subject to adjustment for stock splits, stock dividends, and comparable restructuring activities. The ESPP also includes an "evergreen" feature, which provides that an additional number of shares will automatically be added to the shares authorized for issuance under the ESPP on January 1st of each year, beginning on the first January 1 immediately following the effective date of June 19, 2014 and ending on (and including) January 1, 2024. The number of shares added each calendar year will be the lesser of (a) 1% of the total number of shares of the Company's capital stock (including all classes of the Company's common stock) outstanding on December 31st of the preceding calendar year, and (b) 720,000 shares. However, the Board may decide to approve a lower number of shares (including no shares) before January 1 of any year. The stock purchasable under the ESPP will be shares of authorized but unissued or reacquired common stock, including shares repurchased by the Company on the open market. If a purchase right under the ESPP terminates without having been exercised in full, any shares not purchased under that purchase right will again become available for issuance under the ESPP. Under the evergreen provision of the Plan, the number of shares issuable under the Plan has increased to 1,685,103 shares.

During the years ended December 31, 2016 and 2015, the Company issued 68,845 and 47,857 shares of the Company's common stock under the ESPP, respectively. Stock compensation expense related to the ESPP was \$1.1 million, \$0.7 million, and \$0.1 million for the years ended December 31, 2016, 2015, and 2014, respectively.

Restricted Stock Units and Stock Options

Eligible employees may receive a grant of RSUs annually with the size and type of award generally determined by the employee's salary grade and performance level. In addition, certain management and professional level employees typically receive stock options and RSU grants upon commencement of employment. Eligible employees may also receive a grant of stock options annually. Non-employee members of our Board of Directors will receive a grant of RSUs and stock options annually and any future new directors are expected to receive a grant of RSUs and stock options.

The Company's RSU and stock option grants provide for accelerated or continued vesting in certain circumstances as defined in the plans and related grant agreements, including a termination in connection with a change in control. RSUs generally vest in equal amounts on each of the first four anniversaries of the grant date. Stock options generally vest in a 25% increment upon the first anniversary of the grant date, and in equal monthly amounts for the three years following the one year anniversary of the grant date.

In 2009, the Company established an equity incentive plan (the "Plan") pursuant to which incentives may be granted to officers, employees, directors, consultants and advisors. Incentives under the Plan may be granted in any one or a combination of the following forms: (a) incentive stock options and non-statutory stock options; (b) stock appreciation rights; (c) stock awards; (d) restricted stock; and (e) performance shares.

The Plan is administered by the Board of Directors of the Company or a committee appointed by the Board of Directors, which determines the types of awards to be granted, including the number of shares subject to the awards, the exercise price and the vesting schedule. As of December 31, 2013, the number of shares of common stock, which may be granted under the Plan, shall not exceed 4,625,000. In March 2014, the Board of Directors approved an amendment to increase the shares of common stock issuable under the Plan to 6,500,000 shares. In June 2014, the Board of Directors approved an amendment and restatement of the Plan, increasing the shares of common stock issuable under the Plan to 9,150,000 shares as well as allowing for an automatic annual increase (the "evergreen provision") to the shares issuable under the Plan to the lower of (i) 5% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year; or (ii) a lower number determined by the Board of Directors (which can also be zero). Under the evergreen provision of the Plan, the number of shares issuable under the Plan has increased to 12,393,176 shares.

The term of any stock option granted under the Plan cannot exceed 10 years. Options shall not have an exercise price less than 100% of the fair market value of the Company's common stock on the grant date, and generally vest over a period of four years.

If the individual possesses more than 10% of the combined voting power of all classes of stock of the Company, the exercise price shall not be less than 110% of the fair market value of a common share of stock on the date of grant.

The fair value of each stock option granted has been determined using the Black-Scholes option pricing model. The material factors incorporated in the Black-Scholes model in estimating the fair value of the options granted for the periods presented were as follows:

| | YEAR ENDED DECEMBER 31, | | |
|-------------------------|-------------------------|-------------------|------------------|
| | 2016 | 2015 | 2014 |
| Risk-free interest rate | 1.17% - 2.30% | 1.19% - 2.02% | 1.62 - 1.77% |
| Expected volatility | 67.9% - 72.7% | 67.5% - 80.0% | 75.0% - 80.0% |
| Stock price | \$39.95 - \$62.51 | \$50.02 - \$79.34 | \$1.35 - \$53.90 |
| Expected term | 6 years | 6 years | 6 years |
| Expected dividend yield | 0% | 0% | 0% |

Due to the Company's lack of sufficient history as a publicly traded company, management's estimate of expected volatility is based on the average volatilities of a sampling of five companies with similar attributes to the Company, including: industry, stage of life cycle, size and financial leverage.

Stock-based compensation for the years ended December 31, 2016, 2015 and 2014 are as follows (in thousands):

| | YEAR ENDED DECEMBER 31, | | |
|----------------------------|-------------------------|-----------|-----------|
| | 2016 | 2015 | 2014 |
| General and administrative | \$ 38,833 | \$ 20,694 | \$ 6,129 |
| Research and development | 34,746 | 19,978 | 10,016 |
| Total | \$ 73,579 | \$ 40,672 | \$ 16,145 |

A summary of the status of the options issued under the Plan as of December 31, 2016, and information with respect to the changes in options outstanding is as follows:

| | OUTSTANDING STOCK OPTIONS | WEIGHTED-AVERAGE EXERCISE PRICE | WEIGHTED-AVERAGE REMAINING CONTRACTUAL LIFE (YEARS) | AGGREGATE INTRINSIC VALUE |
|--|---------------------------|---------------------------------|---|---------------------------|
| Balance at January 1, 2016 | 7,393,261 | \$ 34.18 | 8.8 | \$ 211,104,379 |
| Granted under the Plans | 2,890,700 | 49.86 | | |
| Exercised | (493,119) | 7.53 | | |
| Surrendered/Cancelled | (62,812) | 59.96 | | |
| Balance at December 31, 2016 | 9,728,030 | \$ 40.03 | 8.3 | \$ 117,247,537 |
| Vested and expected to vest at December 31, 2016 | 9,515,551 | \$ 39.80 | 8.3 | \$ 116,651,672 |
| Exercisable at December 31, 2016 | 3,723,354 | \$ 28.57 | 7.6 | \$ 83,217,322 |

As of December 31, 2016, total compensation expense not yet recognized related to stock option grants amounted to approximately \$201.0 million, which will be recognized over a weighted-average period of 2.7 years. Additionally, 298,758 options that were early exercised for total proceeds of \$0.3 million were unvested, and were recorded as a current liability on the consolidated balance sheets. The weighted-average grant date fair value per share of employee options granted under the Plan was \$30.69, \$61.89 and \$13.36 for the years ended December 31, 2016, 2015 and 2014, respectively.

The following table summarizes information about stock options outstanding as of December 31, 2016:

| EXERCISE PRICE | OUTSTANDING | | | EXERCISABLE | | |
|----------------|--------------|--|------------------------------------|-----------------|------------------------------------|----------------|
| | TOTAL SHARES | WEIGHTED-AVERAGE REMAINING CONTRACTUAL LIFE | WEIGHTED-AVERAGE EXERCISE PRICE | TOTAL SHARES | WEIGHTED-AVERAGE EXERCISE PRICE | EXERCISE PRICE |
| | | | | | | |
| 0.38 - 1.35 | 1,807,826 | 6.87 | \$ 0.99 | 1,436,197 | \$ 0.95 | |
| 6.89 - 32.52 | 1,004,055 | 7.46 | 12.00 | 551,350 | 12.22 | |
| 32.56 - 46.09 | 1,552,861 | 9.14 | 42.12 | 199,282 | 33.80 | |
| 47.72 - 50.95 | 994,400 | 9.45 | 49.34 | 38,603 | 50.61 | |
| 51.15 - 53.90 | 1,158,400 | 8.17 | 52.45 | 519,514 | 52.55 | |
| 54.02 - 59.23 | 1,022,200 | 8.79 | 56.21 | 219,855 | 56.88 | |
| 60.20 - 63.87 | 1,159,100 | 8.86 | 62.99 | 352,382 | 63.24 | |
| 63.89 - 72.45 | 974,688 | 8.33 | 67.40 | 391,411 | 67.32 | |
| 76.05 | 49,500 | 8.92 | 76.05 | 13,406 | 76.05 | |
| 79.34 | 5,000 | 8.88 | 79.34 | 1,354 | 79.34 | |
| Total | 9,728,030 | 8.30 | \$ 40.03 | 3,723,354 | \$ 28.57 | |

The following table summarizes information about RSU activity as of December 31, 2016:

| | OUTSTANDING RESTRICTED STOCK UNITS | WEIGHTED-AVERAGE GRANT DATE FAIR VALUE | WEIGHTED-AVERAGE RECOGNITION PERIOD (YEARS) | AGGREGATE UNRECOGNIZED COMPENSATION |
|---------------------------------------|--|--|--|---|
| Unvested shares as of January 1, 2016 | 187,100 | \$ 64.32 | 3.0 | \$ 11,878,381 |
| Granted | 624,196 | 48.44 | | |
| Vested | (57,805) | 61.56 | | |
| Forfeited | (4,000) | 49.88 | | |
| Balance at December 31, 2016 | 749,491 | \$ 51.38 | 3.3 | \$ 33,607,176 |

NOTE 9—INCOME TAXES

The composition of our income tax expense (benefit) from continuing operations for the years ended December 31, 2016, 2015, and 2014, was as follows (in thousands):

| | Current | Deferred | Total |
|-------------------------------------|----------------|-----------------|----------------|
| Year ended December 31, 2016 | | | |
| U.S. Federal | \$ — | \$ — | \$ — |
| State | 1 | — | 1 |
| Foreign | — | (2,895) | (2,895) |
| Total | 1 | (2,895) | (2,894) |
| Year ended December 31, 2015 | | | |
| U.S. Federal | \$ — | \$ — | \$ — |
| State | 1 | — | 1 |
| Foreign | — | — | — |
| Total | 1 | — | 1 |
| Year ended December 31, 2014 | | | |
| U.S. Federal | \$ — | \$ — | \$ — |
| State | 1 | — | 1 |
| Foreign | — | — | — |
| Total | 1 | — | 1 |

The following table reconciles the Company's effective income tax rate from continuing operations to the federal statutory tax rate of 34%:

| | YEAR ENDED DECEMBER 31, | | |
|---|--------------------------------|-------------|-------------|
| | 2016 | 2015 | 2014 |
| Federal income taxes | 34.00 % | 34.00 % | 34.00 % |
| State income taxes, net of federal benefit | 6.17 % | 3.77 % | 5.08 % |
| Foreign rate differential | (14.69)% | (3.51)% | — % |
| Meals and entertainment | (0.03)% | (0.04)% | (0.06)% |
| Stock Compensation | (0.55)% | (2.27)% | (4.41)% |
| Non-cash interest | — % | — % | (0.53)% |
| Net operating losses expiring due to Section 382 limitation | — % | (1.36)% | — % |
| Return to provision difference | (0.07)% | (0.21)% | — % |
| ASC 740-10 | (4.07)% | (8.11)% | — % |
| Other permanent differences | 0.17 % | 0.13 % | — % |
| Change in valuation allowance | (19.86)% | (22.40)% | (28.85)% |
| Prior period true up | — % | — % | (5.23)% |
| Income tax benefits from continuing operations | 1.07 % | — % | — % |

The Company has chosen to early adopt ASU No. 2015-17 issued by FASB, which requires all companies to either prospectively or retrospectively classify all deferred tax assets and liabilities as noncurrent on the balance sheet. The Company has elected to apply these requirements prospectively. As of December 31, 2016 and 2015, the tax effects of temporary differences that gave rise to significant portions of deferred tax assets and deferred tax liabilities were:

| | DECEMBER 31, | |
|--|---------------------|-------------|
| | 2016 | 2015 |
| Deferred tax assets - noncurrent: | | |
| Deferred rent | \$ 2,305 | \$ 754 |
| Net operating loss and other carryforwards | 66,702 | 5,582 |
| Stock compensation | 34,129 | 14,974 |
| Accrued compensation | 5,236 | 2,234 |
| Deferred revenue | 14,883 | 21,205 |
| Collaboration agreements | 6,485 | — |
| Other | 679 | 351 |
| Less: valuation allowance | (111,835) | (40,164) |
| Total deferred tax assets - noncurrent | 18,584 | 4,936 |
| Deferred tax liabilities - noncurrent: | | |
| Section 481 adjustment | (1,319) | (19) |
| Fixed assets | (2,334) | (1,254) |
| Intangible assets | (1,682) | (3,201) |
| Deferred state taxes | (13,249) | (3,307) |
| Total deferred tax liabilities - noncurrent | (18,584) | (7,781) |
| Net deferred tax assets/(liabilities) - noncurrent | \$ — | \$ (2,845) |

As of December 31, 2016, the Company has a full valuation allowance against deferred tax assets for all jurisdictions. In evaluating the need for a valuation allowance, the Company considers all sources of taxable income available to realize the deferred tax asset, including the future reversal of existing temporary differences, forecasts of future taxable income, and tax planning strategies. The Company has cumulative global pretax accounting losses for the years 2016, 2015, and 2014.

As of December 31, 2016, the Company had \$167.5 million of federal net operating losses, which can be carried forward for 20 years and will begin expiring in 2032. The Company also had \$303.1 million of California and \$165.5 million of Maryland net operating losses, which can be carried forward for 20 years and will begin expiring in 2032 and 2033, respectively. Additionally, the Company had \$9.2 million of foreign net operating losses, a portion of which can be carried forward for 9 years and will begin expiring in 2024. Since the Company has incurred net losses since its inception and maintains a full valuation allowance on its net deferred tax assets, adoption of ASU 2016-09, Improvements to Employee Share-Based Payment Accounting, had no significant impact on the Company's consolidated financial statements or its cash flow presentation for the years ended December 31, 2016 and 2015.

In general, if the Company experiences a greater than 50% percentage point aggregate change in ownership of certain significant stockholders over a three-year period (a "Section 382 ownership change"), utilization of its pre-change NOL carryforwards are subject to an annual limitation under Section 382 of the Internal Revenue Code (and similar state laws). The annual limitation generally is determined by multiplying the value of the Company's stock at the time of such ownership change (subject to certain adjustments) by the applicable long-term tax-exempt rate. Such limitations may result in expiration of a portion of the NOL carryforwards before utilization and may be substantial. The Company has performed an analysis to determine if there have been any Section 382 ownership changes, and determined that approximately \$4.1 million of NOL carryforwards would expire before utilization as a result of the ownership changes indicated by the analysis. The Company is in the process of updating the analysis through December 31, 2016. Any additional limitations to tax attributes will be reflected as appropriate once the analysis is complete.

The Company files income tax returns in federal, state, and foreign jurisdictions. The Company is currently subject to examination for all years since its inception.

As of December 31, 2016, the Company had \$19.3 million of uncertain tax benefits that, if recognized, would impact the effective tax rate. None of these uncertain tax benefits are expected to be resolved within the next twelve months. Authoritative guidance requires companies to accrue interest and related penalties, if applicable, on all tax positions for which reserves have been established consistent with jurisdictional tax laws. The Company recognizes accrued interest and penalties related to uncertain tax benefits as a component of income tax expense. There was no interest accrued related to unrecognized tax benefits.

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in 2016 as there are sufficient net operating losses to cover the uncertain tax benefit and related interest. No penalties have been accrued for any year.

The following table summarizes the activity related to uncertain tax benefits for 2016, 2015, and 2014, excluding any interest or penalties:

| | FOR THE YEAR ENDED DECEMBER 31, | | |
|--|---------------------------------|------------------|-------------|
| | 2016 | 2015 | 2014 |
| Balance as of January 1 | \$ 10,392 | \$ — | \$ — |
| Gross increases - tax positions in prior periods | 1,379 | — | — |
| Gross decreases - tax positions in prior periods | (2,143) | — | — |
| Gross increases - tax positions in current periods | 9,628 | 10,392 | — |
| Gross decreases - tax positions in current periods | — | — | — |
| Net unrecognized tax benefits as of December 31 | <u>\$ 19,256</u> | <u>\$ 10,392</u> | <u>\$ —</u> |

NOTE 10—RELATED PARTIES

Two River Consulting

On June 1, 2009, the Company entered into a services agreement with Two River Consulting, LLC (“TRC”) to provide various clinical development, operational, managerial, administrative, accounting and financial services to the Company. The Company’s Chairman of the Board of Directors, CEO and President, a director of the Company, and the Company’s Secretary are each partners of TRC. The costs incurred for these services were \$300,000, \$300,000 and \$330,000 for the years ended December 31, 2016, 2015 and 2014, respectively.

In addition from time-to-time, some of the Company’s expenses are paid by TRC. The Company reimburses TRC for these expenses and no interest is charged on the outstanding balance. Reimbursable expenses were \$61,101, \$40,067 and \$45,376 for the years ended December 31, 2016, 2015 and 2014, respectively.

As of December 31, 2016 and 2015, the Company had a payable to TRC of \$87,500 and \$88,729, respectively. The amounts are recorded as other current liabilities and accounts payable on the consolidated balance sheets. All balances owed as of December 31, 2015 were paid in full during the first quarter of 2016 and all balances owed as of December 31, 2016 were paid in full during the first quarter of 2017.

In connection with a 2013 financing, the Company issued to certain designees of Riverbank, a FINRA member broker dealer and a related party controlled by certain officers and/or directors of the Company, which acted as placement agent for the Company, Series A Warrants to purchase 148,146 Series A Preferred Shares, which were converted to warrants that are exercisable for shares of common stock at an exercise price equal to \$2.04 as a result of the IPO and the conversion of the Series A Preferred Shares into common stock. These warrants remain outstanding as of December 31, 2016, and are exercisable until May 2018.

Cell Design Labs

The Company accounts for its equity investments under the cost method of accounting when it does not have the ability to exercise significant influence over the investees. For investments where the Company has the ability to exercise significant influence, the equity method of accounting is used. Significant influence is generally deemed to exist if the Company's ownership interest in the voting stock of the investee ranges between 20% and 50%, although other factors, such as representation on the investee's board of directors or any significant business relationships that may exist with the investee, are also considered in determining whether the equity method of accounting is appropriate. Under the equity method of accounting, the investment is recorded at cost in the consolidated balance sheets under the other assets caption, and adjusted for dividends received and our share of the investee's earnings or losses, together with other-than-temporary impairments which are recorded in the consolidated statements of operations.

The Company's total equity investment in Cell Design Labs as of December 31, 2015 was \$1.0 million which was accounted for as a cost method investment. On June 1, 2016, the Company entered into a research collaboration and license agreement with Cell Design Labs to develop “on/off switches” for the Company's CAR T cell pipeline. Pursuant to the agreement, the Company paid Cell Design Labs a \$2.0 million upfront payment and will pay up to an additional \$9.0 million during the

research and development term to support Cell Design Labs' research. The Company previously made a \$1.0 million equity investment in Cell Design Labs in December 2015 and, in connection with entering into the agreement, the Company made an additional equity investment in Cell Design Labs of approximately \$6.0 million in June 2016. Cell Design Labs will be eligible to receive up to \$56.5 million in total milestone payments based on the successful completion of research, clinical, regulatory and commercial milestones. Cell Design Labs will also be eligible to receive tiered single digit royalties for sales on a licensed product-by-licensed product and country-by-country basis, until the date on which the licensed product is no longer covered by certain intellectual property rights.

The Company may terminate the agreement with prior written notice. Either party may also terminate the agreement upon certain insolvency events of the other party, or with written notice upon material breach by the other party, if such breach has not been cured within a defined period of receiving such notice.

Upon making the additional equity investment in June 2016, the Company reassessed its ability to exert influence over Cell Design Labs by quantitatively assessing its overall ownership position in Cell Design Labs and the number of voting seats it had on the Cell Design Labs board of directors, as well as by qualitatively assessing the effect of its research collaboration on the investee. Due to the Company's increased ownership interest, which remains less than 20%, the Company obtaining a seat on Cell Design Labs' board of directors, and the Company entering into a research collaboration and license agreement with Cell Design Labs, the Company prospectively applied the equity method of accounting to this investment, which is included in the other assets caption within the consolidated balance sheets. The carrying amount of the Company's investment in Cell Design Labs was \$6.5 million as of December 31, 2016. During the year ended December 31, 2016, the Company expensed \$3.4 million related to the research and development activities conducted by Cell Design Labs under the research collaboration and license agreement, of which \$0.6 million remains outstanding as of December 31, 2016 and is included in the accrued expenses and other current liabilities caption on the consolidated balance sheets.

During the year ended December 31, 2016, the Company recognized \$0.5 million of its share of Cell Design Labs' operating loss, which was recorded in general and administrative expense within the consolidated statements of operations.

NOTE 11—COMMITMENTS AND CONTINGENCIES

In the normal course of business, the Company enters into contracts that contain a variety of indemnifications with its employees, licensors, suppliers and service providers. Further, the Company indemnifies its directors and officers who are, or were, serving at the Company's request in such capacities. The Company's maximum exposure under these arrangements is unknown as of December 31, 2016 and 2015. The Company does not anticipate recognizing any significant losses relating to these arrangements.

In the ordinary course of business, the Company is also involved in various legal proceedings and other matters—including those discussed in this Note—that are complex in nature and have outcomes that are difficult to predict. The Company would record accruals for loss contingencies to the extent that it concludes that it is probable that a liability has been incurred and the amount of the related loss can be reasonably estimated. The Company evaluates, on a quarterly basis, developments in legal proceedings and other matters that could cause an increase or decrease in the amount of any liability that has been accrued previously.

The Company is facing one patent infringement lawsuit as of December 31, 2016. Juno Therapeutics, Inc. ("Juno") and Memorial Sloan Kettering Cancer and Sloan Kettering Institute for Cancer Research ("MSK") filed a patent infringement lawsuit against the Company on December 19, 2016 in the U.S. District Court of Appeals for the District of Delaware. Juno and MSK are claiming that KTE-C19, upon commercialization, will infringe an MSK patent licensed by Juno relating to certain CAR compositions of matter. On February 23, 2017, the Company filed a motion to dismiss this lawsuit based upon lack of subject matter jurisdiction. The Company had previously filed a petition with the United States Patent and Trademark Office ("USPTO") to institute an inter partes review ("IPR") proceeding requesting a determination that the claims in the MSK patent are unpatentable. On December 16, 2016, the USPTO Patent Trial and Appeal Board declined to revoke the MSK patent. The Company filed a Notice of Appeal to this decision on February 16, 2017. The lawsuit is at the early stages of the legal process and has not progressed sufficiently through discovery and/or development of important factual information and legal issues to enable the Company to estimate a range of possible loss, if any. While it is not possible to accurately predict or determine the eventual outcome of the IPR appeal and the lawsuit, an adverse determination could have a material adverse effect on the Company's consolidated results of operations, financial position or cash flows.

Regardless of outcome, litigation can also have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

Leases

On May 9, 2013, the Company entered into a lease agreement for a facility to be used for administrative and research and development activities. The lease commenced on June 15, 2013 and has a 10-year initial term expiring on June 15, 2023. The lease also provides for rent abatements and scheduled increases in base rent. The lease also contains options for the Company to extend the lease upon its initial expiration.

On January 26, 2015, the Company entered into a lease agreement for manufacturing and processing of engineered autologous cell therapy, research and development, and office space in Santa Monica, California. The lease has a 10-year term commencing on February 1, 2015. Upon certain conditions, the Company has two options to extend the lease each for an additional five years. The Company is required to remit base rent of \$45,540 per month, which will increase at a rate of 3% per year. The lease provided a contribution from the landlord towards leasehold improvements of \$0.7 million, which the Company has received as of December 31, 2016.

On February 17, 2015, the Company entered into a lease agreement for a manufacturing facility in El Segundo which is adjacent to Los Angeles International Airport. The lease has a 10-year and seven month term commencing on January 1, 2016. Upon certain conditions, the Company has two options to extend the lease, each for an additional five years. The Company paid \$124,183 upon execution of the lease and is required to remit base rent of \$124,183 per month, which will increase at a rate of 3% per year and are subject to certain lease abatement terms. The Company also has an option to expand the lease for additional square footage at the same rent per square foot as the base premises, which option must be exercised prior to July 1, 2017. The lease provided a contribution from the landlord towards leasehold improvements of \$2.6 million, which the Company has received as of December 31, 2016.

On June 22, 2015, the Company entered into a sublease agreement for office space in Santa Monica, California. The lease has a 26 month term commencing on June 22, 2015. The Company is required to remit base rent of \$50,389 from July 1, 2016 to the end of the lease term.

On July 1, 2016, the Company entered into a lease agreement for the lease of primarily office space in El Segundo, which is adjacent to the Company's manufacturing facility. The lease has a nine year and six month term commencing on February 1, 2017. Upon certain conditions, the Company has two options to extend the lease, each for an additional five years. The

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Company paid \$176,400 upon execution of the lease and is required to remit base rent of \$176,400 per month, which will increase at a rate of approximately 3% per year, subject to certain lease abatement terms.

On November 4, 2016, the Company entered into a lease agreement for primarily office space in Santa Monica to serve as the Company's future headquarters, with a lease term of fifteen years. Subject to lease commencement and certain lease abatement terms, the Company is required to remit base rent of \$876,205 per month, which will increase at a rate of approximately 3% per year for the first ten years and then 3.5% per year during years eleven through fifteen. The Company posted a customary letter of credit in the amount of \$5.5 million as a security deposit, which was secured by government securities with a value of \$7.0 million. The customary letter of credit amount increased by \$5.5 million in January 2017. The amount of the letter of credit may be subject to reductions during the term of the lease beginning in the fourth year of the lease term. Pursuant to the lease, the landlord will contribute an aggregate of \$17.5 million toward the tenant improvements for the leased space.

Rent expense charged to operations were \$7.4 million, \$2.8 million and \$0.7 million for the years ended December 31, 2016, 2015 and 2014, respectively. As of December 31, 2016 the Company has received from its landlords \$3.5 million related to tenant improvement allowances. These landlord incentive payments are recorded as deferred rent, and are recognized as reductions to rent expense over the term of the respective leases. The Company has recorded corresponding other current deferred rent liabilities and other non-current deferred rent liabilities related to these tenant improvement allowances within the consolidated balance sheets and recognized a reduction in rent expense of \$0.3 million for the year ended December 31, 2016 as a result of the tenant improvement allowances.

The following table summarizes our lease obligations at December 31, 2016 (in thousands):

| YEARS ENDED DECEMBER 31, | LEASE COMMITMENTS | |
|------------------------------|-------------------|---------------|
| | Operating Lease | Capital Lease |
| 2017 | \$ 5,133 | \$ 161 |
| 2018 | 8,740 | 69 |
| 2019 | 14,961 | 32 |
| 2020 | 16,763 | 3 |
| 2021 | 17,280 | — |
| 2022 and thereafter | 171,945 | — |
| Total minimum lease payments | \$ 234,822 | \$ 265 |

NOTE 12—T-CELL FACTORY ACQUISITION

On March 17, 2015, the Company entered into a stock purchase agreement (the "Purchase Agreement") with TCF and the shareholders of TCF (collectively, the "Sellers"), to acquire all of the outstanding capital stock of TCF. The signing and closing of the transaction happened concurrently whereupon TCF became the Company's wholly-owned subsidiary and was renamed Kite Pharma EU B.V. The Purchase Agreement contains certain representations, warranties, covenants and indemnities by the parties thereto, in each case customary for a transaction of this nature and scope. The Company acquired TCF for the opportunity to significantly expand its pipeline of TCR-based product candidates. Using its proprietary TCR-GENErator technology platform, the Company believes TCF may be able to systematically discover tumor-specific TCRs.

Pursuant to the Purchase Agreement, the Company paid approximately \$15.1 million in cash and issued \$4.2 million in shares of its common stock, which equated to 66,120 shares of its common stock, to the Sellers. The cash paid to the Sellers is subject to customary adjustments for net working capital. At the closing, €2.0 million was withheld from the Sellers to satisfy any potential indemnity claims arising under the Purchase Agreement, the balance of which was paid to the Sellers upon the termination of an indemnity holdback period of 18 months in 2016.

The Company is obligated to pay up to €242.5 million upon the achievement of certain clinical, regulatory and sales milestones relating to TCR-based product candidates that may be developed by TCF. The estimated fair value of the contingent consideration obligation totaled \$16.6 million as of the acquisition date. A portion of these milestone payments will be made to TCF directly to pay its licensors and employees. At the Company's option, a portion of the clinical and regulatory milestones may be paid in shares of the Company's common stock to the Sellers. In connection with the acquisition, each of the

Sellers entered into non-competition and non-solicitation agreements with the Company, and certain of the Sellers and other key scientists entered into employment agreements with Kite Pharma EU.

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The TCF acquisition has been accounted for as a business combination in accordance with ASC 805. Accordingly, the Company has estimated the purchase price allocation based on the fair values of the assets acquired and liabilities assumed. Intangible assets were valued using the relief from royalty method under the income approach for license agreements, and using the with-and-without method for non-compete agreements. In connection with the acquisition, the Company acquired an exclusive license agreement with IBA GmbH, or IBA, for intellectual property rights relating to certain methods of selecting TCRs. Additionally, a non-exclusive license agreement with Sanquin Blood Supply Foundation relating to certain methods of detecting and selecting TCRs was acquired. Lastly, the Company acquired a license agreement with the Netherlands Cancer Institute-Antoni Van Leeuwenhoek ("NKI") for know-how, materials and protocols, and the right of first negotiation for certain intellectual property rights with relevance to TCRs that may be developed in Dr. Schumacher's lab at the NKI over the next several years. NKI, IBA and Sanquin Blood Supply Foundation have a right to a certain portion of the milestone payments that may be paid under the Purchase Agreement. These license agreements are estimated to have a useful life of ten years.

The preparation of the valuation required the use of significant assumptions and estimates. Critical estimates included, but were not limited to, future expected cash flows, including projected revenues and expenses, and applicable discount rates. These estimates were based on assumptions that the Company believes to be reasonable.

The following table presents the calculation of the purchase price (in thousands):

| | Purchase Price |
|------------------------------|-------------------------|
| Cash and stock consideration | \$ 19,260 |
| Contingent consideration | 16,622 |
| Working capital adjustment | (59) |
| Total | <u><u>\$ 35,823</u></u> |

The purchase price is allocated between the tangible and intangible assets and assumed liabilities based on their estimated fair values at March 17, 2015. Based on the Company's valuation of the fair value of tangible and intangible assets acquired and liabilities assumed, the purchase price is allocated as follows (in thousands):

| | Allocation |
|-----------------------------|-------------------------|
| Non-compete agreements | \$ 12,400 |
| Licensing agreements | 3,000 |
| Goodwill | 24,692 |
| Tangible current assets | 361 |
| Tangible non-current assets | 214 |
| Liabilities assumed | (4,844) |
| Total | <u><u>\$ 35,823</u></u> |

In connection with the non-compete agreements and license agreements acquired, the Company established a corresponding deferred tax liability of \$3.8 million, which is included in the liabilities assumed in the table above. The Company determined that there was no meaningful in-process research and development that should be recorded related to the TCF acquisition. Further, as TCF's operations were immaterial to the Company's financial statements, no pro forma presentations have been made related to TCF.

The following table presents amortizable intangible assets acquired and their amortization periods (in thousands):

| | Estimated Fair Value | Amortization Period |
|------------------------|-----------------------------|----------------------------|
| Non-compete agreements | \$ 12,400 | 3 years |
| Licensing agreements | 3,000 | 10 years |
| Total | <u><u>\$ 15,400</u></u> | |

During the year ended December 31, 2015, one of the non-compete agreements with a non-employee Seller was terminated. As a result, the Seller likewise forfeited the future receipt of funds due under the contingent consideration agreement. As a result,

the Company reduced its non-compete agreement intangible asset by \$1.1 million as well as the deferred tax liability related to the non-compete agreement by \$0.3 million, and also reduced its contingent consideration liability by \$1.3 million, which would no longer be payable to this Seller. This resulted in a \$0.5 million adjustment that was recorded as other income (expense), net within the consolidated statement of operations.

NOTE 13—SUBSEQUENT EVENTS

Research Collaboration and License Agreement with Daiichi Sankyo Company, Ltd.

On January 5, 2017, the Company entered into a collaboration and license agreement (the “DS Agreement”) with Daiichi Sankyo Company, Limited (“Daiichi Sankyo”) pursuant to which the Company has granted to Daiichi Sankyo an exclusive license to develop and commercialize KTE-C19, in Japan.

In connection with the execution of the DS Agreement, Daiichi Sankyo has made an upfront payment to the Company of \$50.0 million. In addition, the Company will be eligible to receive future payments totaling up to \$200.0 million for development and commercial milestones relating to KTE-C19 as well as future royalties.

Joint Venture with Shanghai Fosun Pharmaceutical Industrial Development Co., Ltd.

On January 10, 2017, the Company entered into a cooperative joint venture agreement (“JV Agreement”) with Shanghai Fosun Pharmaceutical Industrial Development Co., Ltd. (“Fosun Pharma”) pursuant to which the parties will establish a joint venture (the “JV Company”) for the purpose of developing, manufacturing and commercializing KTE-C19 in the mainland of the People’s Republic of China, the Hong Kong Special Administration Region and the Macau Special Administration Region (together, the “China Market”).

Pursuant to the JV Agreement, the Company and Fosun Pharma will each own 50% of the JV Company, with 40% of any profits allocated to the Company and the remaining 60% allocated to Fosun Pharma. Fosun Pharma will contribute the RMB equivalent of \$20.0 million in cash to the JV Company and the Company will contribute to the JV Company certain exclusive commercial rights to be set forth in the Product and Know-How License Agreement with the JV Company.

Pursuant to the JV Agreement, the Company and Fosun Pharma have agreed that within 20 business days following the establishment of the JV Company, which is subject to government approval, the JV Company and the Company will enter into a Technology License Agreement and a Product and Know-How License Agreement (together with the Technology License Agreement, the “License Agreements”). Under the License Agreements, Kite will grant the JV Company an exclusive license to manufacture, develop and commercialize KTE-C19 in the China Market.

Pursuant to the Technology License Agreement, the Company will receive a \$40.0 million upfront payment from the JV Company, funded by Fosun Pharma, and, in exchange for the contribution of KTE-C19, will also be entitled to (a) regulatory and commercial milestone payments of up to \$35.0 million and (b) subject to certain conditions, mid-single digit sales royalties.

NOTE 14—SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

The following financial information reflects all normal recurring adjustments, which are, in the opinion of management, necessary for a fair statement of the results of the interim periods. Summarized quarterly data for 2016 and 2015 are as follows (in thousands, except per share data):

| | 2016 | | | |
|--|----------------------|-----------------------|----------------------|-----------------------|
| | First Quarter | Second Quarter | Third Quarter | Fourth Quarter |
| Total revenues | \$ 5,127 | \$ 4,795 | \$ 7,341 | \$ 4,907 |
| Total operating expenses | \$ 51,097 | \$ 71,069 | \$ 82,487 | \$ 90,704 |
| Loss from operations | \$ (45,970) | \$ (66,274) | \$ (75,146) | \$ (85,797) |
| Net loss attributable to common stockholders | \$ (43,916) | \$ (64,274) | \$ (73,946) | \$ (84,934) |
| Net loss per share attributable to common stockholders basic and diluted | \$ (0.90) | \$ (1.31) | \$ (1.49) | \$ (1.70) |

| | 2015 | | | |
|--|---------------|----------------|---------------|----------------|
| | First Quarter | Second Quarter | Third Quarter | Fourth Quarter |
| Total revenues | \$ 2,881 | \$ 4,403 | \$ 5,087 | \$ 4,887 |
| Total operating expenses | \$ 18,497 | \$ 26,550 | \$ 33,051 | \$ 43,110 |
| Loss from operations | \$ (15,616) | \$ (22,147) | \$ (27,964) | \$ (38,223) |
| Net loss attributable to common stockholders | \$ (15,088) | \$ (20,892) | \$ (27,442) | \$ (38,231) |
| Net loss per share attributable to common stockholders basic and diluted | \$ (0.36) | \$ (0.48) | \$ (0.63) | \$ (0.85) |

Net loss per share is computed independently for each of the quarters presented in the tables above. Therefore, the sum of the quarterly per-share calculations will not equal the annual per share calculation.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive and financial officers (our principal executive officer and principal financial officer, respectively), evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of December 31, 2016. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2016, our principal executive officer and principal financial officer concluded that, as of such date, our disclosure controls and procedures were effective at a reasonable assurance level.

Management’s Annual Report on Internal Controls Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has assessed the effectiveness of our internal control over financial reporting based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013 framework). Based on our evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of our internal control over financial reporting has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their attestation report herein, which expresses an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2016.

Inherent Limitations of Internal Controls

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

We regularly review our system of internal control over financial reporting and make changes to our processes and systems to improve controls and increase efficiency, while ensuring that we maintain an effective internal control environment. Changes may include such activities as implementing new, more efficient systems, consolidating activities, and migrating processes. During the fiscal quarter ended December 31, 2016, we continued to expand upon our implementation of an enterprise resource planning system, including expansion of the financial reporting and procurement enhancements implemented in the fiscal quarter ended September 30, 2016 which are intended to strengthen our overall control environment. Other than these changes mentioned, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Kite Pharma, Inc.

We have audited Kite Pharma, Inc.'s (the "Company") internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the "COSO criteria"). Kite Pharma, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Kite Pharma, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Consolidated Balance Sheets as of December 31, 2016 and 2015, and the related Consolidated Statements of Operations and Comprehensive Loss, Changes in Stockholders' Equity and Cash Flows for each of the three years in the period ended December 31, 2016, and our report dated February 28, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Los Angeles, California
February 28, 2017

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers, and Corporate Governance

Incorporated by reference from the information in our Proxy Statement for our 2017 Annual Meeting of Stockholders, which we will file with the SEC within 120 days of the end of the fiscal year to which this Annual Report relates.

Item 11. Executive Compensation

Incorporated by reference from the information in our Proxy Statement for our 2017 Annual Meeting of Stockholders, which we will file with the SEC within 120 days of the end of the fiscal year to which this Annual Report relates.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Incorporated by reference from the information in our Proxy Statement for our 2017 Annual Meeting of Stockholders, which we will file with the SEC within 120 days of the end of the fiscal year to which this Annual Report relates.

Item 13. Certain Relationships and Related Transactions and Director Independence

Incorporated by reference from the information in our Proxy Statement for our 2017 Annual Meeting of Stockholders, which we will file with the SEC within 120 days of the end of the fiscal year to which this Annual Report relates.

Item 14. Principal Accountant Fees and Services

Incorporated by reference from the information in our Proxy Statement for our 2017 Annual Meeting of Stockholders, which we will file with the SEC within 120 days of the end of the fiscal year to which this Annual Report relates.

PART IV

Item 15. Exhibits, Financial Statements and Schedules

(a)(1) Financial Statements.

The response to this portion of Item 15 is set forth under Part II, Item 8 above.

(a)(2) Financial Statement Schedules.

All schedules have been omitted because they are not required or because the required information is given in the Financial Statements or Notes thereto set forth under Item 8 above.

(a)(3) Exhibits.

See the Exhibit Index immediately following the signature page of this Annual Report. The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this Annual Report.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

KITE PHARMA, INC.

February 28, 2017

By: /s/ Arie Belldegrun

Arie Belldegrun, M.D.

President and Chief Executive Officer

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned directors and officers of Kite Pharma, Inc. (the "Company"), hereby severally constitute and appoint Arie Belldegrun and Paul L. Jenkinson, and each of them singly, our true and lawful attorneys, with full power to them, and to each of them singly, to sign for us and in our names in the capacities indicated below, any and all amendments to this Annual Report on Form 10-K, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as each of us might or could do in person, and hereby ratifying and confirming all that said attorneys, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue of this Power of Attorney.

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Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

| Name | Title | Date |
|--|---|-------------------|
| /s/ Arie Belldegrun Arie Belldegrun, M.D. | President, Chief Executive Officer and Chairman of the Board of Directors <i>(Principal Executive Officer)</i> | February 28, 2017 |
| /s/ Paul L. Jenkinson Paul L. Jenkinson | Chief Financial Officer <i>(Principal Financial and Accounting Officer)</i> | February 28, 2017 |
| /s/ David Bonderman David Bonderman | Member of the Board of Directors | February 28, 2017 |
| /s/ Farah Champsí Farah Champsí | Member of the Board of Directors | February 28, 2017 |
| /s/ Ian Clark Ian Clark | Member of the Board of Directors | February 28, 2017 |
| /s/ Roy Doumani Roy Doumani | Member of the Board of Directors | February 28, 2017 |
| /s/ Franz B. Humer Franz B. Humer | Member of the Board of Directors | February 28, 2017 |
| /s/ Joshua A. Kazam Joshua A. Kazam | Member of the Board of Directors | February 28, 2017 |
| /s/ Ran Nussbaum Ran Nussbaum | Member of the Board of Directors | February 28, 2017 |
| /s/ Jonathan M. Peacock Jonathan M. Peacock | Member of the Board of Directors | February 28, 2017 |
| /s/ Steven B. Ruchefsky Steven B. Ruchefsky | Member of the Board of Directors | February 28, 2017 |

EXHIBIT INDEX

| Exhibit Number | Exhibit Description | Incorporated by Reference | | | | Filed Herewith |
|----------------|---|---------------------------|--------------|---------|-----------------|----------------|
| | | Form | SEC File No. | Exhibit | Filing | |
| 3.1 | Amended and Restated Certificate of Incorporation of the Registrant. | 10-Q | 001-36508 | 3.1 | August 14, 2014 | |
| 3.2 | Amended and Restated Bylaws of the Registrant. | 10-Q | 001-36508 | 3.2 | August 14, 2014 | |
| 4.1 | Form of Common Stock Certificate of the Registrant. | S-1/A | 333-196081 | 4.1 | June 11, 2014 | |
| 4.2 | Amended and Restated Investors' Rights Agreement by and among the Registrant and certain of its stockholders, dated April 25, 2014. | S-1 | 333-196081 | 4.2 | May 19, 2014 | |
| 10.1+ | Form of Indemnity Agreement by and between the Registrant and its directors and officers. | S-1/A | 333-196081 | 10.1 | June 11, 2014 | |

| | | | | | | |
|--------|--|-------|------------|-------|-------------------|---|
| 10.2+ | Kite Pharma, Inc. 2014 Equity Incentive Plan. | S-1/A | 333-196081 | 10.2 | June 11, 2014 | |
| 10.3+ | Form of Stock Option Agreement, Notice of Exercise and Stock Option Grant Notice for the Kite Pharma, Inc. 2014 Equity Incentive Plan. | | | | | X |
| 10.4+ | Form of Restricted Stock Unit Agreement and Restricted Stock Unit Grant Notice for the Kite Pharma, Inc. 2014 Equity Incentive Plan. | | | | | X |
| 10.5 | Kite Pharma, Inc. Non-Employee Director Compensation Policy. | | | | | X |
| 10.6+ | Kite Pharma, Inc. Employee Stock Purchase Plan. | S-8 | 333-196978 | 99.4 | June 23, 2014 | |
| 10.7+ | Change in Control and Severance Benefit Plan. | 10-K | 001-36508 | 10.5 | February 29, 2016 | |
| 10.8+ | Employment Letter Agreement by and between the Registrant and Cynthia Butitta, dated January 28, 2014. | S-1/A | 333-196081 | 10.10 | June 11, 2014 | |
| 10.9+ | Employment Letter Agreement by and between the Registrant and Arie S. Belldegrun, M.D., FACS, dated March 25, 2014. | S-1/A | 333-196081 | 10.11 | June 11, 2014 | |
| 10.10+ | Employment Letter Agreement by and between the Registrant and Jeffrey Wiezorek, dated April 15, 2014. | S-1/A | 333-196081 | 10.13 | June 11, 2014 | |
| 10.11+ | Employment Agreement by and between the Registrant and David Chang, M.D., Ph.D., dated May 22, 2014. | S-1/A | 333-196081 | 10.14 | June 11, 2014 | |

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| Exhibit Number | Exhibit Description | Incorporated by Reference | | | | Filed Herewith |
|----------------|---|---------------------------|--------------|---------|-------------------|----------------|
| | | Form | SEC File No. | Exhibit | Filing | |
| 10.12+ | Employment Agreement by and between the Registrant and Shawn Tomasello, dated December 16, 2015. | 10-K | 001-36508 | 10.5 | February 29, 2016 | |
| 10.13+ | Employment Agreement by and between the Registrant and Timothy Moore, dated February 9, 2016. | 10-Q | 001-36508 | 10.1 | May 9, 2016 | |
| 10.14+ | Employment Agreement by and between the Registrant and Paul Jenkinson, dated May 3, 2016. | 10-Q | 001-36508 | 10.1 | August 8, 2016 | |
| 10.15 | Consulting Agreement by and between the Registrant and Two River Consulting, LLC, dated June 1, 2009. | S-1 | 333-196081 | 10.14 | May 19, 2014 | |
| 10.16 | Standard Industrial Commercial Single-Tenant Lease by and between the Registrant and Clover Associates, LLC, dated May 9, 2013. | S-1 | 333-196081 | 10.15 | May 19, 2014 | |
| 10.17 | Standard Industrial Commercial Single-Tenant Lease by and between the Registrant and Utah Industrial Capital, LLC, dated February 17, 2015. | 10-Q | 001-36508 | 10.2 | May 15, 2015 | |
| 10.18 | First Amendment, dated April 27, 2015, to the Standard Industrial Commercial Single-Tenant Lease by and between the Registrant and Utah Industrial Capital, LLC, dated February 17, 2015. | 10-Q | 001-36508 | 10.3 | May 15, 2015 | |
| 10.19 | Standard Industrial Commercial Single-Tenant Lease by and between the Registrant and Merritt SAB 17 LP, dated January 26, 2015. | 10-Q | 001-36508 | 10.4 | May 15, 2015 | |
| 10.20 | Standard Industrial Commercial Multi-Tenant Lease by and between Kite Pharma, Inc. and 2383 Utah, LLC, dated July 1, 2016 | 8-K | 001-36508 | 10.1 | July 6, 2016 | |
| 10.21 | Lease between CA-Colorado Center, LLC and the Registrant, dated November 4, 2016. | 10-Q | 001-36508 | 10.1 | November 9, 2016 | |
| 10.22** | License Agreement by and among the Registrant, Cabaret Biotech Ltd. and Dr. Zelig Eshhar, dated December 12, 2013. | S-1/A | 333-196081 | 10.17 | June 17, 2014 | |

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| Exhibit Number | Exhibit Description | Incorporated by Reference | | | | Filed Herewith |
|----------------|--|---------------------------|--------------|---------|-------------------|----------------|
| | | Form | SEC File No. | Exhibit | Filing | |
| 10.23** | Cooperative Research and Development Agreement for Intramural-PHS Clinical Research by and between the Registrant and the U.S. Department of Health and Human Services, as represented by the National Cancer Institute an Institute, Center, or Division of the National Institutes of Health, effective August 31, 2012. | 10-Q | 001-36508 | 10.1 | August 10, 2015 | |
| 10.24** | Amendment #1, dated February 24, 2015, to the Cooperative Research and Development Agreement for Intramural-PHS Clinical Research by and between the Registrant and the U.S. Department of Health and Human Services, as represented by the National Cancer Institute an Institute, Center, or Division of the National Institutes of Health, effective August 31, 2012. | 10-Q | 001-36508 | 10.2 | August 10, 2015 | |
| 10.25** | Research Collaboration and License Agreement by and between the Registrant and Amgen Inc., dated December 31, 2014. | 10-Q | 001-36508 | 10.2 | August 8, 2016 | |
| 10.26** | Patent License Agreement by and between the Registrant and the National Institutes of Health, dated December 31, 2014. | 10-K | 001-36508 | 10.23 | March 26, 2015 | |
| 10.27** | First Amendment, first effective on June 15, 2015, to the Patent License Agreement by and between the Registrant and the National Institutes of Health, dated December 31, 2014. | 10-Q | 001-36508 | 10.3 | August 10, 2015 | |
| 10.28 | Second Amendment, first effective on March 24, 2016, to the Patent License Agreement by and between the Registrant and the National Institutes of Health, dated December 31, 2014. | 10-Q | 001-36508 | 10.4 | May 9, 2016 | |
| 10.29** | Patent License Agreement by and between the Registrant and the National Institutes of Health, dated October 1, 2015. | 10-K | 001-36508 | 10.29 | February 29, 2016 | |
| 10.30 | First Amendment, first effective on March 24, 2016, to the Patent License Agreement by and between the Registrant and the National Institutes of Health, dated October 1, 2015. | 10-Q | 001-36508 | 10.5 | May 9, 2016 | |
| 10.31** | License and Research Agreement, between the Registrant and Alpine Immune Sciences, Inc., dated October 26, 2015. | 10-K | 001-36508 | 10.30 | February 29, 2016 | |
| 10.32** | Research Collaboration and License Agreement by and between the | 10-Q | 001-36508 | 10.4 | August 8, 2016 | |

| Exhibit Number | Exhibit Description | Incorporated by Reference | | | | Filed Herewith |
|----------------|---|---------------------------|--------------|---------|--------------|----------------|
| | | Form | SEC File No. | Exhibit | Filing | |
| 10.33 | Warrant to Purchase Stock issued to Joshua A. Kazam, dated May 10, 2013. | S-1 | 333-196081 | 10.19 | May 19, 2014 | |
| 10.34 | Warrant to Purchase Stock issued to Peter M. Kash, dated May 10, 2013. | S-1 | 333-196081 | 10.20 | May 19, 2014 | |
| 10.35 | Warrant to Purchase Stock issued to David M. Tanen, dated May 10, 2013. | S-1 | 333-196081 | 10.21 | May 19, 2014 | |
| 10.36 | Warrant to Purchase Stock issued to M. Tarique Farooqui, dated May 10, 2013. | S-1 | 333-196081 | 10.22 | May 19, 2014 | |
| 10.37 | Warrant to Purchase Stock issued to Timothy McInerney, dated May 10, 2013. | S-1 | 333-196081 | 10.23 | May 19, 2014 | |
| 10.38 | Warrant to Purchase Stock issued to Scott L. Navins, dated May 10, 2013. | S-1 | 333-196081 | 10.24 | May 19, 2014 | |
| 21.1 | Subsidiaries of the Registrant. | | | | | X |
| 23.1 | Consent of Ernst & Young LLP, an Independent Registered Public Accounting Firm. | | | | | X |
| 31.1 | Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended. | | | | | X |
| 31.2 | Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended. | | | | | X |
| 32.1 | Certification of Principal Executive Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. | | | | | X |
| 32.2 | Certification of Principal Financial Officer pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350, as adopted pursuant Section 906 of the Sarbanes-Oxley Act of 2002. | | | | | X |
| 101.INS* | XBRL Instance Document. | | | | | |

| Exhibit Number | Exhibit Description | Incorporated by Reference | | | | Filed Herewith |
|-------------------|---|---------------------------|--------------|---------|--------|-------------------|
| | | Form | SEC File No. | Exhibit | Filing | |
| 101.SCH* | XBRL Taxonomy Extension Schema Document. | | | | | |
| 101.CAL* | XBRL Taxonomy Extension Calculation Linkbase Document. | | | | | |
| 101.DEF* | XBRL Taxonomy Extension Definition Linkbase Document. | | | | | |
| 101.LAB* | XBRL Taxonomy Extension Label Linkbase Document. | | | | | |
| 101.PRE* | XBRL Taxonomy Extension Presentation Linkbase Document. | | | | | |

- + Indicates management contract or compensatory plan, contract, or agreement.
- ** Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the SEC.
- * XBRL (Extensible Business Reporting Language) information is furnished and not filed herewith, is not a part of a registration statement or Prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, and otherwise is not subject to liability under these sections.