NantKwest, Inc.
Form 10-K
March 12, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 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, 2017

OR

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

NANTKWEST, INC.

(Exact name of Registrant as specified in its Charter)

Delaware	43-1979754
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
3530 John Hopkins Court	
San Diego, California	92121
(Address of principal executive offices)	(Zip Code)

(858) 633-0300

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 $0.0001per share	The NASDAQ Stock Market LLC
	(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 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) 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.

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definition of "large accelerated filer", "accelerated filer", "smaller reporting company", and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer		Accelerated filer
Non-accelerated filer	(Do not check if a small reporting company)	Small reporting company
Emerging growth company		

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

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES NO

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on the NASDAQ Global Select Market on June 30, 2017, was approximately $208.3 million. The number of shares of Registrant's common stock outstanding as of March 7, 2018 was 79,031,520.

DOCUMENTS INCORPORATED BY REFERENCEAs noted herein, the information called for by Part III is incorporated by reference to specified portions of the Registrant's definitive proxy statement to be filed in conjunction with the Registrant's 2018 Annual Meeting of Stockholders, which is expected to be filed not later than 120 days after the Registrant's fiscal year ended December 31, 2017.

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Explanatory Note

As used in this Annual Report on Form 10-K, or Annual Report, for the year ended December 31, 2017, the terms the "Company," "our," "us" or "we" refer to NantKwest, Inc.

PART I

Forward-Looking Statements

This Annual Report on Form 10-K, or this Annual Report, may contain "forward-looking statements" within the meaning of the federal securities laws made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under Part I, Item 1A, "Risk Factors" in this Annual Report. Except as required by law, we assume no obligation to update these forward-looking statements, whether as a result of new information, future events or otherwise. These statements, which represent our current expectations or beliefs concerning various future events, may contain words such as "may," "will," "expect," "anticipate," "intend," "plan," "believe," "estimate" or other words indicating future results, though not all forward-looking statements necessarily contain these identifying words. Such statements may include, but are not limited to, statements concerning the following:

- our ability to pioneer immunotherapy, implement precision cancer medicine and change the current paradigm of cancer care;
- our expectations regarding the potential benefits of our strategy and technology;
- our expectations regarding the operation of our product candidates and related benefits;
- our ability to utilize multiple modes to induce cell death;
- our beliefs regarding the benefits and perceived limitations of competing approaches, and the future of competing technologies and our industry;
- details regarding our strategic vision and planned product candidate pipeline;
- our beliefs regarding the success, cost and timing of our product candidate development activities and clinical trials;
- our expectations regarding our ability to utilize the phase I aNK clinical trial data to support the development of all of our product candidates;
- the timing or likelihood of regulatory filings or other actions and related regulatory authority responses, including any planned investigational new drug, or IND, filings or pursuit of accelerated regulatory approval pathways or orphan drug status and breakthrough therapy designations;
- our ability to implement an integrated discovery ecosystem and the operation of that planned ecosystem, including being able to regularly add neoepitopes and subsequently formulate new product candidates;
- the ability and willingness of strategic collaborators, including certain affiliates of NantWorks, to share our vision and effectively work with us to achieve our goals;
- the ability and willingness of various third parties to engage in research and development activities involving our product candidates, and our ability to leverage those activities;
- our ability to attract additional third party collaborators;
- our expectations regarding the ease of administration associated with our product candidates;
- our expectations regarding the patient compatibility associated with our product candidates;
- our beliefs regarding the potential markets for our product candidates and our ability to serve those markets;
- our ability to produce an "off-the-shelf" therapy;
- our beliefs regarding the potential manufacturing and distribution benefits associated with our product candidates, and our ability to scale up the production of our product candidates;
- our plans regarding our planned manufacturing facility;
- our ability to obtain and maintain regulatory approval of any of our product candidates, and any related restrictions, limitations and/or warnings in the label of any approved product candidate;
- our ability to commercialize any approved products;
- the rate and degree of market acceptance of any approved products;
- our ability to attract and retain key personnel;

- the accuracy of our estimates regarding any future revenue as well as our future operating expenses, future revenue, capital requirements and needs for additional financing;
- our ability to obtain funding for our operations, including funding necessary to complete further development and any commercialization of our product candidates;
- our ability to obtain and maintain intellectual property protection for our product candidate and not infringe upon the intellectual property of others;
- regulatory developments in the United States and foreign countries;
- our expectations regarding the period during which we qualify as an emerging growth company under the JOBS Act; and
- our use of the proceeds from our initial public offering.

In addition, you should refer to the "Risk Factors" section of this Annual Report for a discussion of other important factors that may cause actual results to differ materially from those expressed or implied by the forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this Annual Report will prove to be accurate. Furthermore, if the forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

This Annual Report also contains estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data, and similar sources.

Item 1. Business

Overview

We are a pioneering clinical-stage immunotherapy company focused on harnessing the power of the innate immune system by using the natural killer cell to treat cancer, infectious diseases and inflammatory diseases. Natural killer, or NK, cells are the body's first line of defense due to their innate ability to rapidly seek and destroy abnormal cells, such as cancer or virally-infected cells, without prior exposure or activation by other support molecules required to activate adaptive immune cells such as T-cells.

We believe that our proprietary NK cell line, coupled with our planned integrated discovery ecosystem, positions us to implement precision cancer medicine by leveraging the advances that have evolved during the past decade and addressing newly discovered challenges of cancer. Cancer is only recently understood to be a complex of rare diseases, with hundreds of patient-specific, cancer-promoting mutated proteins, some known and many more unknown called neoepitopes. Identifying and targeting these mutated proteins is our strategy to overcome the challenges of cancer in the era of genomics, transcriptomics and immuno-oncology. We believe neoepitopes, which are newly discovered antigens, selectively expressed on the cancer cells and not on the essential normal tissue, represent large untapped targeting opportunities for immune effector cells such as our activated NK cells.

Multiple Modes of Tumor Cell Killing. Our immuno-oncology NK platform has multiple modes to potentially induce cell death against the tumor or infected cell by: (1) direct killing by binding to stress ligands expressed by the diseased cell with the release of toxic granules directly into the tumor cell; (2) antibody mediated killing by binding to antibodies, that are either produced in the body or in response to vaccination or administered as monoclonal antibody products in combination, and enhancing their cancer killing effect, enabling targeted cell killing through antibody dependent cellular cytotoxicity, or ADCC; and (3) direct targeted killing by binding to known or newly discovered tumor-specific antigens expressed on the surface of tumor cells and inducing cell death by the release of toxic granules directly into the tumor cell and by the release of cytokines and chemokines which recruit additional innate and adaptive immune responses, including the recruitment of cytotoxic T-cells.

Our targeted therapeutic areas include: (1) cancer, focusing on solid tumors, hematological malignancies as well as residual disease such as cancer stem cells, (2) infectious diseases, including viral and other opportunistic pathogens, and (3) inflammatory diseases, ranging from rare inherited diseases to more prevalent autoimmune disorders.

The NANT Cancer Vaccine. The NANT Cancer Vaccine, or NCV, Program is a personalized therapy that utilizes our off-the-shelf natural killer cells as the backbone of the therapy. NCV consists of an initial tumor conditioning regimen followed by a molecularly-informed immunologic conditioning therapy. More specifically, NCV combines tumor genomic, transcriptomic and proteomic data derived from our affiliate entity NantOmics' genomic sequencing and proteomic analysis services with the novel delivery of metronomic, albumin bound low-dose chemotherapy in conjunction with certain other agents, followed by a sequenced administration of tumor-associated antigen vaccines and IL-15, all of which potentiate our NK cell therapy to drive immunogenic cell death while avoiding the ravages of toxic high dose chemotherapy. By inducing immunogenic cell death and enhancing a patient's innate and adaptive immune system, NCV is designed to attain a long-term, durable response in multiple cancer types with a potential for lower toxicity and improved efficacy in comparison with current standards of care. We believe that employing our NK cell therapy in the context of NCV would biologically be a more effective combination for long term success over available standards of care that employ maximum tolerated dose, tolerogenic cell death and immune system compromise.

Our Integrated Discovery Ecosystem for Precision Medicine. In order to effectively target newly discovered neoepitopes, we plan to integrate the following ecosystem to help drive the utility of our NK cell therapies against these cancer-promoting mutated proteins, including the use of our genetically modified NK cells that express the high-affinity CD16 receptor, or haNK, in conjunction with cancer vaccines that induce in vivo antibody formation directed against these mutated proteins as well as the development of NK cells modified to directly target these mutated proteins: (1) a high-speed supercomputing infrastructure to help identify both known antigens on the surface of tumor cells and neoepitopes in clinical patients suffering from cancer, in a timely manner and at large scale; (2) a next-generation genomic and transcriptomic sequencing infrastructure to identify the expression of the neoepitopes on the surface of the tumor cell, developed by NantOmics; (3) delivering an antigenic neoepitope via an adenoviral or yeast platform developed by an affiliate entity to induce IgG1 in vivo production and enhanced ADCC activity by our haNK therapy; (4) a diverse library of human antibodies from which to interrogate and extract an antibody matching the neoepitope; and (5) haNK and chimeric antigen receptor, or CAR, targeted Natural Killer, or taNK, cells potentially capable of being produced as a scalable cell-based "off-the-shelf" therapy without the need for patient compatibility matching. We expect to regularly add newly discovered neoepitopes from our discovery engine, and we believe the thousands of newly discovered antigens selectively expressed on the cancer cells and not on the essential normal tissue will provide us with the ability to create new and targeted libraries of antibodies to be potentially delivered as living drugs for metastatic cancer cells and cancer stem cells.

Innate Killing: aNK Platform. We have developed a unique NK cell which we believe is capable of being produced as a cell-based "off-the-shelf" therapy that can be molecularly engineered in a variety of ways to impart enhanced killing potential for cancer and virally-infected cells. Unlike normal NK cells, our NK cells do not express inhibitory receptors, which diseased cells often utilize to turn off the killing function of NK cells. We have developed a unique activated NK, or aNK, cell which lacks these inhibitory receptors but retains activation receptors that enable selective innate targeting and killing of stressed diseased cells. They do so through an array of naturally occurring activation receptors that bind to stress proteins that are overexpressed on the surfaces of cells under stress such as cancerous and virally infected cells. These killing mechanisms are preserved in our aNK cells and are increased compared to normal NK cells by virtue of delivering a larger payload of lytic enzymes and cytokines responsible for the direct and indirect killing of diseased cells. We believe our aNK cells can be grown at commercial scale as a living drug using our proprietary manufacturing and distribution processes.

Several phase I safety studies with aNK cells have concluded in a variety of bulky hematological cancers and solid tumors, enrolling 46 patients, with demonstrated safety at all doses studied and encouraging evidence of single-agent activity and a durable remission, including complete responses in liquid tumors. Based on these clinical trials, we are developing the therapeutic applications of this aNK platform through molecular engineering designed to leverage additional modes of killing available to aNKs, including antibody mediated killing- the haNK platform, antigen targeted killing- the taNK platform, and both antibody mediated and antigen targeted killing- the t-haNK platform, all described below.

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Antibody Mediated Killing- the haNK Platform. We have genetically engineered our aNK cells to overexpress high-affinity CD16 receptors, which bind to antibodies. These high-affinity NK, or haNK, cells are designed to directly bind to antibodies, such as Herceptin, Erbitux and Rituxan with the intent to enhance the cancer killing effect of these therapeutic antibodies by facilitating targeted cell killing through ADCC. Antibodies are prevalently used to treat cancer and generate over $50.0 billion in reported annual sales. Several studies have suggested long term response to these antibodies correlates with a patient's NK cells expressing the high affinity CD16 receptor. We believe, based on currently available literature, that only approximately 10% to 15% of the addressable patient population eligible for antibody therapies carry high-affinity CD16 receptors. This implies that our haNK product candidate may have significant market potential as a combination therapy to potentially address a large number of patients, including at earlier stages of cancer therapy, who have poor responses to antibody products. We therefore intend to develop our haNK product candidate as combination therapies with widely-used Federal Drug Administration, or FDA, approved antibody products such as avelumab, rituximab, cetuximab and trastuzumab. Furthermore, we are currently initiating numerous combination therapy trials utilizing an IL-15 super-agonist, that has been the subject of several studies at the National Cancer Institute, or NCI, as well as adenoviral and yeast vaccine platforms developed by affiliate entities to deliver known tumor associated antigens as well as neoepitopes to induce in vivo production of IgG1 and maximize ADCC killing utilizing our haNK product. Good Manufacturing Practice, or GMP, master and working cell banks of this product have been successfully established earlier in 2017 and will serve as our source for product for our clinical trials and commercialization going forward. We have optimized our haNK product manufacturing process partly through the successful development of a product that does not require IL-2 supplementation, thereby overcoming a technically challenging and costly limitation that many other NK cell based therapies face. We have also successfully established a process for cryopreservation and long term storage of final dose forms, thereby optimizing production efficiencies and allowing for on-demand availability and minimal handling at the infusion sites. Cryopreserved haNK is now approved for use in 12 phase Ib/II clinical trials.

Antigen Targeted Killing- the taNK Platform. We have genetically engineered our aNK platform to express CARs to target specific antigens on the surface of abnormal cells. These taNK cells are designed to directly bind to tumor-specific antigens in both solid and hematological cancers and induce cell death by the release of toxic granules directly into the tumor cell and by the release of cytokines and chemokines which recruit additional innate and adaptive immune responses, including the recruitment of cytotoxic T-cells. These tumor-specific antigens can be divided into the following four classes, which can be targeted by our taNK platform: (1) checkpoint inhibitors expressed on the surface of tumor cells such as PD-L1; (2) well-established tumor surface antigens such as HER2 and CD19; (3) newly discovered neoepitopes; and (4) novel surface receptors associated with cancer stem cells. We believe taNK cell activation through the binding of its CAR receptors to cancer specific proteins is potent enough to overcome many inhibitory signals and immunosuppressive factors present in the tumor microenvironment. In the last 6 months our HER2.taNK product has passed several regulatory milestones in Europe, including the initiation and dosing of the first patient in a phase I clinical trial for HER2-positive glioblastoma, and plans for our U.S. phase I clinical trial in Her2-positive solid tumors are well underway.

Antibody Mediated and Antigen Targeted Killing- the t-haNK Platform. Our newest line of products are an innovative combination of our haNK and taNK platforms in a single genetic engineering that incorporates all the features of our haNK platform together with a CAR. The resulting line of products under this platform avails itself to all three modes of killing: innate, antibody mediated and targeted killing. Such products are intended to be combined with therapeutic antibodies to effectively target either two different epitopes of the same cancer specific protein or two different cancer specific proteins. CD19.t-haNK is our lead product among a growing list of product candidates in this pipeline and has demonstrated excellent activity in all three modes of killing in in vitro testing. Combining our CD19.t-haNK with rituximab allows for targeting of both CD19 and CD20 proteins that may be expressed on the same cancer cell and maintains its importance should the cancer be driven to stop expressing one of them. We are currently planning our first in human CD19.t-haNK trial that will be followed immediately by a phase Ib/II combination trial with the NCV.

Potential Advantages of our aNK Platform over T-Cell and Other Current Immunotherapies

The immune system has two components: innate immune cells, such as NK cells, which are always switched on to attack diseased cells, and adaptive immune cells, such as T-cells, which are mobilized to mount a delayed response. Our proprietary aNK platform is specifically designed to potentially address many of the limitations associated with current adaptive autologous cellular immunotherapies. We believe key limitations of adaptive autologous immunotherapy are the need to retrieve non-compromised active T-cells from a cancer patient in a procedure called leukapheresis and the requirement for a complex and costly manufacturing process to develop the therapy. As a consequence of this need to harvest sufficient quantities of active T-cells, current autologous CAR-T cell therapies, in large part, are limited to patients from highly selected, earlier-stage hematological cancers and leave many patients ineligible for treatment. Additionally, patients must undergo lymohodepleting chemotherapy prior to receiving CAR-T therapy and rely on engraftment, thereby exposing themselves to life-threatening serious adverse events for extended periods. In contrast, our allogeneic, “off-the-shelf” NK cells do not rely on the patient as the source of suitable immune cells for processing, thereby availing every cancer patient as a potential candidate for treatment. In addition, our NK cell therapy is intended to be paired with immune potentiating agents, rather than immunodepleting agents, to drive a long-lasting adaptive immune response.

- Innate immune response. aNK platform products are always activated and can naturally detect and rapidly destroy a wide variety of diseased cells without prior exposure to antigens or activation by stimulatory molecules. In contrast, the adaptive immune system requires co-stimulation for activation and clonal expansion, resulting in delayed killing.
- Promotion of adaptive immune response. aNK platform products stimulate the adaptive component of the immune system by producing chemokines and other molecules that activate and recruit adaptive immune cells, including T-cells, to attack the diseased cells.
- Enhancement of ADCC effect with CD16 expressing haNK cells. Our haNK product candidates may have significant market potential as a combination therapy with approved monoclonal antibodies (mAbs) targeting tumor associated antigens as well as neoepitope induced antibodies, potentially addressing a large number of patients who have poor responses to antibody products.
- Wide therapeutic potential across multiple tumor types and even late-stage disease. In preclinical studies and phase I safety clinical trials to date, aNK cells have demonstrated activity in a spectrum of cancers, including bulky hematological cancers and solid tumors, including late-stage cancer patients who have failed multiple rounds of chemotherapy, radiation and stem cell transplantation.
- Ability to attack cancer stem cells. aNK cells have been shown in preclinical studies to attack cancer stem cells, which have proven resistant to conventional chemotherapy.
- Application in diseases beyond cancer. We believe aNK platform products have the potential to treat diseases beyond cancer such as infectious and inflammatory diseases because of the inherent ability of NK cells to kill virally infected and abnormal cells. Preclinical studies in HIV and Ebola viruses demonstrate this capability.
- Well tolerated. aNK cells are hypo-immunogenic and have shown no dose limiting toxicities in over 46 patients who have received therapy to date, even when some patients received as many as 18 infusions of aNK cells over six months. In contrast, clinical trials of CAR-T cell therapy have experienced challenges, such as reports of severe adverse toxicities of cytokine release syndrome and neurotoxicity in numerous patients.
- Ease of administration. aNK platform products may be administrable in outpatient facilities, offering physicians the flexibility to re-dose therapy in the ambulatory setting for extended periods and in large practices. In contrast, CAR-T cell therapy is a complex and costly procedure limited to select certified centers, at times require hospitalization and intensive care unit admission following severe adverse toxicities associated with cytokine release syndrome.
- Virtually universal patient compatibility. aNK platform products do not require patient-donor matching or a minimum level of patient immuno-competence.
- Low-cost, efficient and scalable manufacturing. aNK, haNK, taNK and t-haNK cells have the potential to be expanded on a large scale and readily supplied on demand from what we believe is the world’s only GMP compliant aNK cell bank, a proprietary asset of our company.

Experienced Management Team

Since the founding of our company in 2002, we have assembled a team of proven, experienced and visionary leaders in biotechnology. Our team is led by Patrick Soon-Shiong, M.D., FRCS (C), FACS, our Chairman and Chief Executive Officer, or CEO. Dr. Soon-Shiong was first introduced to us in 2007 when our technology was at a very early stage of development and he provided us with advice and scientific development strategies, including demonstration of activity in the clinical setting following irradiation of the cells and demonstration of safety and activity following multiple infusions in patients with both end-stage solid and liquid tumors. Dr. Soon-Shiong made an equity investment in our company in December 2014 and joined as our Chief Medical Officer in January 2015 and became our Chairman and CEO in March 2015. Dr. Soon-Shiong, a renowned surgeon and scientist, has pioneered novel therapies for both diabetes and cancer, published over 100 scientific papers in the United States, and was issued over 230 worldwide patents on groundbreaking advancements spanning a myriad of fields. He performed the first encapsulated islet stem cell transplant in a diabetic patient in the United States. He invented, developed and launched the first nanoparticle delivery system of human albumin, Abraxane. Dr. Soon-Shiong was founder, Chairman and CEO of American Pharmaceutical Partners (sold to Fresenius SE for approximately $4.6 billion in 2008), Abraxis BioScience (sold to Celgene Corporation for approximately $3.8 billion in 2010) and NantWorks, an ecosystem of companies to create a transformative global health information and next generation pharmaceutical development network.

Barry Simon, M.D., our President and Chief Administrative Officer, who was our CEO from May 2007 until March 2015 and our President and Chief Operating Officer from March 2015 to December 2016, brings decades of drug development and executive leadership experience from Roche Labs., F. Hoffmann-La Roche, Connetics Corp. and Immunomedics, having successfully contributed to Biologics License Applications, or BLAs, and drug launches for Xeloda, Pegasys, Kytril, Fortovase, Valcyte, Fuzeon and Tamiflu.

Since 2015, the company recruited seasoned executives to lead manufacturing, clinical development, regulatory affairs, medical affairs, quality and other critical staff and continues to build the management and manufacturing infrastructure.

Company Vision

Our vision is to be the premier immunotherapy company, harnessing the power of the innate immune system with the NK cell at the core, to pioneer precision medicine in the treatment of cancer, infectious diseases and inflammatory diseases.

Our Core Strategies

Our goal of becoming the world leader in immunotherapy for cancers and other diseases can be realized through a major realignment of how we apply the collective knowledge amassed in this field to date. This starts with precisely determining the 'molecular address' of the target disease and leveraging this knowledge in the methodical selection and staging of both tumor and immune conditioning agents, in accordance with the natural order of biology. Metronomic, low doses of certain agents would be employed to potentiate cellular stress, while an array of other agents would be applied selectively and sequentially to propagate a meaningful and lasting adaptive immune response. We believe that by utilizing the NK cell as the backbone and central coordinator as we engage and sequentially orchestrate the entire ecosystem of immune cells, we can effectively empower the patient's own immune system to regain control by becoming its own 'drug factory' that can establish and once again maintain a cancer-free in vivo environment. The key elements of our strategy include:

- Pursuit of both accelerated regulatory pathways and large market opportunities. We will pursue a comprehensive clinical development plan designed to maximize the commercial potential of our aNK platform and the role of innate immunotherapy as the backbone in the treatment of cancer in combination with chemo and immunotherapies, radiation and surgery. We intend to pursue accelerated regulatory approval pathways and seek indications that can lead to orphan drug status and breakthrough therapy designation, as well as pursue large market opportunities in a wide range of solid tumors.
- Application of our aNK platform product candidates. In the natural order of biology, the NK cell acts as the first line of defense in our bodies in recognizing and clearing mutated or transformed cancerous cells and virally-hijacked cells. Because NK cells play a pivotal role in recruiting and engaging the body's natural vaccine-inducing cells, the dendritic and subsequently B and T-cells, as a result of its direct engagement with abnormal cells, bypassing this critical immune step with downstream therapies run a potentially insurmountable risk of relying on a narrow range of immune mechanisms that will ultimately fail in the patient as the tumor is forced into escaping a targeted intervention. The result is resistant metastatic disease in patients with persistent immune system gaps due to artificially bypassing these critical immune steps. By reinstituting this innate pathway with our aNK platform products in the context of sequential immunotherapy following the inducement of an immunogenic hot tumor, we believe we can induce long term immunity and durable responses.
- haNK. We are leveraging the highly versatile nature of our haNK product candidate to target the large addressable market of already approved monoclonal antibodies, such as Herceptin, Erbitux and Rituxan, in the treatment of a wide range of cancers. Antibody products play a central role across many cancer indications and generate over $50.0 billion in global annual sales. We believe, based on currently available literature, that only approximately 10% to 15% of the patient population eligible for antibody therapy carry high-affinity CD16 receptors. We expect to address the approximately 85% to 90% of patients who are receiving these antibodies but have either unsatisfactory responses or developed resistance and may benefit from our high-affinity CD16 haNK cells administered in combination with one or more of these therapeutic antibodies. In 2017, the FDA granted us regulatory clearance for the first in human study for haNK and we quickly demonstrated that this product can be safely administered in cancer patients. Subsequently in 2017, we filed multiple investigational new drug, or IND, submissions to the FDA for clinical trials with our cryopreserved haNK product candidate in combination with different monoclonal antibodies as well as combinations with our NCV products, developed by affiliate entities, to drive in vivo IgG1 production and

enhance NK activity.

- taNK. We will apply a variety of CAR targeted taNK product candidates to address cancers with well-established tumor surface antigens, such as HER2, EGFR and CD20 in addition to targeting checkpoint ligands such as PD-L1. Because of its ability to overcome inhibitory signaling commonly found in the tumor microenvironment and can kill solid tumor targets without CD80/86 co-activation signaling, we believe our taNK product candidates will have a highly valuable role in treating patients with bulky hematological malignancies and solid tumors. In 2017, the European regulatory agency granted authorization for the first in human phase I trial for HER2.taNK cells for patients with recurrent glioblastoma. The first patient was subsequently dosed with no reported adverse events. HER2.taNK cells will soon be studied in combination with NCV agents in phase I/II trials in patients with HER2 positive breast cancer and other malignancies. Additional targeted taNK products are currently in development for a variety of cancers.

- t-haNK. One of the more recently anticipated and versatile of our platform programs is t-haNK, a class of products capable of all three mechanisms for target killing- innate, antibody mediated and targeted killing. Aside from its natural, unassisted killing ability, it can target two distinct cancer antigens at once - one mediated through an antibody such as rituximab to bind CD20 and the other through a CAR receptor, such as a CD19 receptor. In addition to expressing CD16 receptors, these products are IL-2 growth independent and can express a functional enhancer such as IL-12 or chemokine receptors. CD19.t-haNK is currently in human enabling studies and plans for the first phase I/II lymphoma trial are under way. Subsequent t-haNK products include CD33, CD123, FLT3, PDL1, EGFR and CSPG4.t-haNKs and will be developed in a variety of cancer settings.
- Leverage our integrated discovery engine to discover neoepitopes. Through our strategic collaborations with our affiliate companies at NantWorks, we plan to identify both known antigens on the surface of patient tumor cells and identify the surface expression of neoepitopes from clinical samples and interrogate antibody libraries to identify antibodies that bind to corresponding neoepitopes. Through this cohesive and expansive discovery engine, we can further drive the development of a novel product candidate pipeline, thereby establishing a new category of 'just-in-time' precision medicine therapies. We expect to regularly add newly discovered neoepitopes from our discovery engine. We believe the thousands of newly discovered antigens, selectively expressed on the cancer cells and not on the essential normal tissue, will provide us with the ability to create new and targeted libraries of antibodies to be potentially delivered as living drugs for metastatic cancer cells and cancer stem cells.
- Pursue opportunities with vaccine and cytokine combination partnerships that drive in vivo production of anti-cancer antibodies for ADCC killing with haNK and t-haNK cells. We plan to enroll patients into a wide range of combination therapy studies that employ adenoviral and yeast vaccine platforms together with a novel IL-15 cytokine agonist to deliver tumor associated antigens and neoepitope antigens that induce in vivo production of IgG1, and when combined with our haNK and t-haNK cells, maximize both ADCC killing and adaptive immune responses. We have evolved our haNK and t-haNK platforms to be IL-2 growth independent, which has substantial commercial advantages.
- Pursue opportunities with pharmaceutical companies for commercially approved antibodies and select late-stage antibodies in development. Numerous biopharmaceutical companies have previously licensed our haNK cells for non-therapeutic applications that facilitate the selection and validation of their antibody candidates for development. A growing number of these biopharmaceutical companies have also licensed our haNK cells for a lot release quality-control testing for their clinical-grade antibody products. We plan to leverage these biopharmaceutical business relationships to forge therapeutic collaborations to conduct clinical studies with our haNK and t-haNK product candidates in combination with their late-stage and commercial antibody products in order to demonstrate the combined enhanced killing capabilities in the greater than 85% of patients that lack high-affinity CD16 expression. We believe this potential for enhanced efficacy provides a rationale for studying haNK combinations with these new antibodies, whether during the development phase or after commercial launch by the biopharmaceutical companies.
- Accelerate clinical development of haNK, taNK and t-haNK by entering into phase Ib/II and registration trials with our product candidates in combination with marketed drugs and select late-stage product candidates. A large number of monoclonal antibodies and chemotherapy drugs are being marketed for multiple indications. Published data show these antibodies generally have enhanced activity in patients with high-affinity NK cells. Published data also show that chemotherapy agents such as 5FU, cyclophosphamide and paclitaxel, when administered in low doses, condition the tumors to become immunogenically active and more readily recognizable to the immune system. We plan to accelerate clinical development of our aNK platform product candidates by initiating company-sponsored phase Ib/II and registration trials in combination with commercially approved and select late-stage antibodies and immunotherapies together with select approved chemotherapy agents administered at low-doses. We believe this approach will accelerate the development and potential commercialization of our product pipeline.
- Establish low-cost, scalable manufacturing capabilities to support late-stage clinical trials and global commercialization. We believe our aNK platform products offer unique advantages of a simplified, on-demand manufacturing process that is relatively easy to scale and requires minimal handling at the site of infusion. We have opened our pilot production facility, which can supply clinical product for our phase Ib/II haNK and taNK clinical trials. We are also completing a state-of-the-art, cell-based manufacturing facility which will have the capacity to support large-scale clinical trials and commercialization. We are developing novel manufacturing methods, including

equipment utilizing state-of-the-art optics and proprietary media, designed to maximize the attributes of our NK platform. We also implemented proprietary cryopreservation methods that enable large scale production yields to be frozen down into final dose forms for easy storage and shipping on demand. Cryopreservation allows for significant cost efficiencies and the establishment of commercial scale pipeline supply.

- Extend our NK platform to address diseases beyond cancer. We believe our aNK platform has the potential to address diseases beyond cancer such as viral infectious and inflammatory diseases because of the inherent role of NK cells in recognizing and killing virally infected cells and modulating inflammatory responses. Preclinical studies in Ebola virus demonstrate this capability. Efforts are underway to evaluate the role of the aNK platform in clearing HIV reservoirs as well as other applications in the infectious disease setting.

Our aNK Platform as the Foundation for our haNK, taNK and t-haNK Product Candidates.

Based on the unique characteristics of our aNK cells described above, we are aiming to expand the potential therapeutic applications of our aNK platform through molecular engineering of our aNK cells designed to leverage the multiple modes of killing available to aNK cells, including innate and antibody mediated killing- the haNK platform, innate and antigen targeted killing- the taNK platform, and a combination of all three- the t-haNK platform, as illustrated below.

Antibody Mediated Killing- the haNK Platform. We have genetically engineered our aNK cells to both overexpress high-affinity CD16 receptors and express the IL-2 cytokine. These haNK cells are well suited to directly bind to concurrently administered antibodies such as Herceptin, Erbitux and Rituxan to potentially enhance their targeted cancer killing effects through ADCC, as illustrated below.

Target Activated Killing- the taNK Platform. We have genetically modified our aNK cells to incorporate CAR to target specific antigens on the surface of abnormal cells. These taNK cells are designed to directly bind to tumor-specific antigens in a variety of bulky hematological cancers and solid tumors and induce cell death through the release of toxic granules directly into the tumor cell and the release of cytokines and chemokines which recruit additional innate and adaptive immune responses including the recruitment of cytotoxic T-cells. These tumor-specific antigens targetable by our taNK platform can be divided into the four aforementioned classes: (1) checkpoint inhibitors expressed on the surface of tumor cells such as PD-L1; (2) well-established tumor surface antigens such as HER2 and CD19; (3) neoepitopes; and (4) novel surface receptors associated with cancer stem cells, as illustrated below.

Target Activated and Antibody Mediated Killing- the t-haNK Platform. We have genetically engineered our aNK cells to avail itself to all three mechanisms of killing through the use of both tricistronic and quadcistronic insertions, thereby imparting CAR targeted killing via cancer specific antigens, ADCC based killing as mediated by antibody products, innate killing inherent to NK cells, as well as independence from IL-2 supplementation for expansion and viability and a functional enhancer such as an activating cytokine or intensified trafficking ability. Based on this unique arrangement, t-haNK cells can target two distinct cancer antigens at once- one via its CD16 receptor and an antibody such as rituximab (CD20) and the other through its CAR receptor (i.e. CD19), as illustrated below.

Leveraging Our Assets. We plan to advance clinical candidates from each of these aNK platform types as part of a multifaceted and comprehensively orchestrated tumor and immune-conditioning regimen, collectively known as the NCV regimen. As of the date of this filing, we are proceeding with over 12 Company sponsored INDs with more planned for this year.

aNK Clinical Safety & Activity as the Foundation for our haNK, taNK and t-haNK Programs

Safety Experience with our aNK Platform in Phase I Clinical Trials. Our aNK platform has been evaluated for clinical safety in 46 patients across four phase I clinical trials. Unlike many cell-based adaptive immunotherapy trials, patients were not pre-selected based on the likelihood of response to the intervention, but rather we accepted all-comers with very advanced disease, having failed multiple rounds of standard chemotherapy, radiation, surgery and even stem cell transplantation. Additionally, unlike as seen with most other cell-based trials, none of these patients received lympho-depleting or pre-conditioning agents in order to enhance therapeutic effects.

Across all studies, we demonstrated that our product was well tolerated with no dose limiting toxicities including in patients who received individual doses of aNK cells as high as $1x10^{10}$ cells/m^2, as many as 18 infusions over a six-month period and a cumulative dose as much as $15x10^{10}$ cells. Although aNK is not intended as a monotherapy, early signals of single-agent activity, including partial, mixed and complete responses and stable disease were recorded in all four trials. See figure above.

Princess Margaret Cancer Center, Toronto

Twelve patients with relapsed/refractory hematological malignancies who relapsed after undergoing stem cell transplantation were enrolled in this dose escalation study with aNK monotherapy. The number of cycles of aNK administered ranged from 1-6 with minimal and infrequent toxicities being reported. Some patients experienced grade I fever, chills, fatigue, blurry vision and nausea, with only one grade II toxicity event (fever & chills), which occurred during an aNK infusion. Several patients were reported to have clinical responses to aNK monotherapy in the first two dose groups as follows: Patient#1- Mixed Response, #3- Durable Complete Remission, #5- Clinical Improvement in Symptoms, #6- Mixed Response, and #11- Durable Complete Remission. See figure above.

Cytokine release was not triggered by aNK infusions in a subset of evaluated patients, though a transient rise in TNF- for patient #3 was noted above (Figure 2).

University of Pittsburgh Cancer Institute, Pittsburgh

In this study of advanced AML, only one patient has reported product related adverse event with grade 2 fever and chills that were responsive to supportive care. Clinical activity included blast parentage reductions or stabilization. See figure above.

RUSH University Medical Center, Chicago

In this study which enrolled patients with metastatic renal cell carcinoma, or RCC, and melanoma who failed standard therapy including surgery, radiation and chemotherapy, adverse events were infrequent and limited to grade I/II with the exception of a single grade III fever that responded to supportive care and one case of a single grade IV hypoglycemia in a patient with extensive liver metastasis and tumor lysis that likewise responded immediately to supportive care. With respect to this single-agent, single-course study, stable disease and partial responses were observed in five out of 11 patients who received doses ranging from $1x10^8$ to $1x10^9$ aNK cells and a clinical response was also noted in an advanced melanoma patient. See figure above.

Johann Wolfgang Goethe University, Frankfurt

In another study that primarily enrolled patients with advanced, refractory solid tumors, no product related toxicities were reported and encouraging responses were seen in patients with lung cancer who failed surgery, radiation and chemotherapy, with three out of four patients demonstrating partial response or stable disease. See figure above.

Non-Clinical Validation of haNK, a Compelling Case for haNK-based Therapies

haNK as the Current ‘Gold-Standard’ in Non-Clinical Characterization of Commercial Antibody Products

haNK cells have been widely utilized by over 40 biopharmaceutical companies, including many well-known large-pharma companies, under license for in vitro ADCC testing of their antibodies in development and in certain instances, to release-test their commercially available antibody products. For example, our haNK cells have been adapted for use in commercial assays such as Biotek’s automated Delfia ADCC assay system and Roche and Acea’s xCELLigence system. In this system, below, it was determined that the EC50 of Herceptin is 48% higher in the absence of haNK cells, thereby demonstrating how haNK assists Herceptin in achieving its peak killing capacity.

Irradiated haNK Cells Have a Higher Innate Killing Frequency than Healthy Donor NK Cells

The following graph compares innate killing of target breast cancer cells by healthy donor NK cells versus irradiated haNK cells. Irradiated haNK cells have a 3-fold higher killing frequency (on a per cell basis) than the average killing frequency of healthy donor NK cells thereby demonstrating substantially greater levels of lysis from irradiated haNK cells across a range of effector to target cell ratios (A). Quantitative analysis of the killing frequency demonstrated that on average, it took three healthy donor NK cells to the same amount of tumor target as one irradiated haNK cell (B).

Irradiated haNK Cells as Efficient Killers of a Wide Range of Cancer Types Through Innate Pathways

In the graphs below, irradiated haNK cells exhibit an ability to efficiently lyse and kill 13 human tumor cell lines via innate pathways without the addition of antibodies. This was demonstrated in innate killing assays including lung, colon, breast, cervical, ovarian and pancreatic and chordoma cancer line. With the exception of ASPC-1, target killing was consistently observed in an E:T dependent manner.

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Addition of Antibody Products to haNK Cells Adds an ADCC Mechanism for Killing Tumors Otherwise Resistant to Innate Killing, in a Dose-Dependent Manner

The graphs below depict the increasing ADCC killing activity of our haNK cells in the presence of increasing concentrations of either Herceptin or Rituxan observed in in vitro studies. The comparative killing activity of low-affinity 176F expressing aNK, or laNK, cells, aNK alone and haNK with a non-relevant antibody observed are also depicted below.

Source: J Immunol. 2008 May 1;180(9):6392-401.

In the first graph, aNK, laNK and haNK cells were tested separately in killing of SKOV-3 ovarian cancer cells in the presence of varying concentrations of Herceptin. The assay was performed by loading the tumor cells with radioactive chromium-51 and measuring the release by cytotoxicity in a 4 hour assay. aNK cells expressing the high-affinity 158V variant responded to lower dose of Herceptin (0.001 ug/mL) and exhibited stronger maximal killing response as compared to cells expressing the low-affinity 158F variant. Parental aNK cells, lacking CD16 expression and haNK cells in combination with non-relevant antibody did not exhibit any ADCC response toward the SKOV-3 cells.

In the second graph, aNK cells expressing the high-affinity 158V variant responded to a lower dose of Rituxan (0.001 ug/mL) and exhibited stronger maximal killing response, as compared to cells expressing the low-affinity 158F variant. Parental aNK cells, lacking CD16 expression, did not exhibit any ADCC response toward the 721.221 B-cell lymphoma cells and haNK together with non-relevant antibody did not trigger any ADCC response.

Synergy Demonstrated When Combining Two Antibody Products together with haNK Cells

The graph below depicts the synergistic activity of the combination of Herceptin and Perjeta (HER2/HER3) to mediate ADCC killing observed in in vitro studies. Through the application of haNK cells to kill HER2 positive gastric carcinoma cells, the activity observed in the combination of Herceptin and Perjeta was significantly greater than either agent alone.

haNK Enhances the Killing Capacity of the PD-L1 Checkpoint Inhibitor, Avelumab

Irradiated haNK cells and MDA-MB-231 (human breast carcinoma) cells were used as a target at an E:T ratio of 7.5:1. haNK killing (black bars) and ADCC killing mediated by avelumab (grey bars) are shown in the graphs below. While avelumab alone and control Ab alone show no killing and haNK alone demonstrates some killing via innate pathways, the combination of haNK and avelumab yields the highest degree of killing, attributable to targeting the checkpoint antigen as a target (A). Separately, it was demonstrated that irradiated haNK cells do not exhibit cytotoxic activity against other haNK cells (B).

haNK and Avelumab Combination Exhibits Potent Killing Across a Variety of Cancer Types

As illustrated in the graphs below, avelumab-mediated ADCC by haNK cells demonstrated enhanced killing against a variety of cancer types in 4-hour assays, which was even pronounced in 18-hour assays. Both haNK with isotype control (black squares) and haNK with avelumab (blue circles) mediated lysis of H460 human lung carcinoma cells in an E:T dose dependent manner (A). Similar results were also seen with several other human cell lines including cervical cancer CaSki cell (B); HCC4006: lung carcinoma (C); H441: lung carcinoma (D); SKOV3: ovarian carcinoma (E); MDA-MB-231: breast carcinoma (F); and HTB-4: bladder carcinoma (G).

Rationale for Developing our haNK in Combination with Approved and Late-stage Antibody Products That Utilize the ADCC Killing Pathway

In multiple clinical trials conducted by third parties, patients who were homozygous for high-affinity CD16 (158V/V) generally experienced better responses to exogenous antibody therapy than patients who were carriers of a low affinity CD16 allele (158F carriers or 158F/F or V/F). The illustration from one study below shows the difference in progression-free survival between HER2 positive breast cancer patients treated with Herceptin who have the homozygous high-affinity form of CD16 and those who have the low affinity form to be approximately 20% at 48 months.

Data from three clinical trials demonstrating this point are shown below. The rationale therefore for combining haNK with Rituxan, Herceptin and Erbitux in patients with low affinity CD16 alleles (158F carriers or 158F/F or 158V/F), should enhance the killing effect of these antibodies and achieve the results for patients with 158V/V alleles.

Antibodies are prevalently used and generate over $50.0 billion in reported global annual sales. It has been reported that perhaps only approximately 10% to 15% of the addressable patient population for antibody therapies carry high-affinity CD16 receptors. This implies that our haNK product candidates may have significant market potential for these and potentially all antibody products that kill via the ADCC pathway as a combination therapy to address a large number of patients who have poor responses with antibodies.

Implementing Phase II Combination Immunotherapy Studies That Incorporate haNK Plus Commercially Approved and Select Late-stage Development Antibodies as a Core Component of the NANT Cancer Vaccine Program.

We plan to conduct a wide range of NANT Cancer Vaccine, or NCV, studies that incorporate haNK directed by genomic, transcriptomic and proteomic analyses of tumor and peripheral blood samples offered by affiliates. Our accelerated strategy is to enroll patients into eleven phase II studies in a variety of cancers that that are currently open and to subsequently advance to registration trials. The following table lists many of the commercial antibody products that can potentially be paired up with haNK therapy.

Antibodies Approved for Cancer Treatment

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Phase I/II haNK Clinical Trials

We announced earlier in 2017 that we received FDA clearance for our first in human haNK trial in patients with advanced solid cancers. We have since safely dosed patients and submitted this data to the FDA as part of 13 IND applications for our phase II haNK plus NCV trials. Many of these INDs were filed in the second half of 2017, with the balance filed at the start of 2018, all of which have been accepted by the FDA and are in various stages of initiation and enrollment. Also in 2017, a cryopreserved form of haNK was incorporated into our trials and our corresponding INDs amended. These trials consist of a lead-in phase I safety portion followed by an open-label, single arm phase II portion designed to further assess safety as well as to assess clinical responses. Eligible patients generally include those who have recurrent or metastatic disease that have failed standard of care therapy. Tumor genomic and proteomic testing is conducted as feasible and plays an important role in our trials. Cancer types currently include pancreatic, Merkel cell, squamous cell, triple negative breast, urothelial, non-Hodgkin's lymphoma, head & neck, non-small cell lung, colorectal, melanoma and ovarian cancers. Treatment intervention generally includes a tumor conditioning combination consisting of low-dose protein-bound paclitaxel, bevacizumab and certain other agents, depending on the cancer type. This is followed by an immune conditioning combination that includes haNK cells, as the backbone of the regimen, avelumab and an IgG1 antibody product, depending on the cancer testing, IL-15 cytokine therapy and select adenoviral based vaccines, all in a three-week repeating cycle that is conducted entirely in an outpatient setting.

haNK Clinical Trials Program

Our pancreatic cancer trial was the first haNK NCV study to enroll patients. The trial has been enrolling subjects whose cancer has progressed after standard of care therapy. Encouraging preliminary responses have been observed in the first three patients to reach at least four months on study. These patients entered the trial with preexisting liver metastasis, two with lung metastasis, abnormally elevated CA 19-9 and CEA cancer markers, weight loss and requiring pain management. Patients received several cycles of haNK plus NCV and there have been no reports of dose limiting toxicities to date. In addition, we observed substantial reduction or normalization of tumor cancer markers such as CA 19-9 and CEA, resolution of pain and the discontinuation of pain management, weight gain, and disease stabilization.

The regulatory path leading to our current haNK pancreatic cancer trial, QUILT 3.070, maintained a focus on safety while evolving both the therapeutic intervention and the study design, as outlined in the panel below. After demonstrating phase I safety and activity of aNK monotherapy in both single and repeat dosing, we evaluated haNK monotherapy in a similar fashion in QUILT 3.028. We then demonstrated safety of the combination of aNK and NCV in pancreatic cancer patients in QUILT 3.039. This was followed by the introduction of haNK to the NCV combination in QUILT 3.060 and finally the introduction of a cryopreserved haNK formulation together with the addition of low-dose Aldoxorubicin and a design change to extend the length of each treatment cycle to 3-weeks, in QUILT 3.070. Upon completion, we anticipate transitioning to a registration trial that incorporates a standard of care comparator arm.

A similar path has been followed for our Merkel Cell Carcinoma program, which has now transitioned fully to QUILT 3.045, cryopreserved haNK in combination with IL-15, avelumab and NCV.

Incorporating CAR: Our taNK and t-haNK Programs

We have genetically engineered our aNK and haNK platforms to express CAR that target specific antigens found on the surface of cancerous cells. These CAR expressing cells, generally called taNKs and t-haNKs, bind to tumor-specific antigens expressed on solid tumors and hematological malignancies and the resulting activation signaling can be strong enough to overcome both cancer escape mechanisms and suppressive factors present in the tumor microenvironment. Killing is induced through both the release of toxic granules directly into the tumor cell and the release of cytokines and chemokines which stimulate and recruit additional innate and adaptive immune responses, including the recruitment of cytotoxic T-cells. These tumor-specific antigens can be divided into four classes, all of which can be targeted by our taNK and t-haNK platforms: (1) checkpoint inhibitors expressed on the surface of tumor cells such as PD-L1; (2) well-established tumor surface antigens such as HER2 and CD19; (3) newly discovered neoepitopes; and (4) novel surface receptors associated with cancer stem cells.

The figure below highlights some of the CAR.taNK products and their intended targets using our aNK platform, which appears in the literature.

The construct for our taNK and t-haNK product candidates is depicted schematically below. We believe that interrogating antibody libraries will allow for the selection of appropriate antibodies that can in turn be translated into CARs that selectively target and bind to known or novel tumor surface antigens. CARs are complex molecules that are designed to traverse the cell membrane and are comprised of four elements, a) the antibody-derived Fv fragment, or scFv. which appears on the external membrane surface of the taNK or t-haNK cell, where it is exposed and available to bind to cancer specific antigens, b) a transmembrane hinge region, c) an optional CD28 co-stimulatory domain, and d) one of several signaling domain segments which resides on the internal surface of the membrane where, upon external Fv binding, is available to signal the activation cascade to release cytotoxic compounds to destroy the targeted cancer cell. Unlike CAR-T and TCR therapies, taNK and t-haNK killing is human leukocyte antigen, or HLA, independent for off-the-shelf applications and do not depend on additional (second generation) co-stimulatory domains, such as 4-1BB or OX40, which are often necessary in CAR-T cells for immune cell activation and survival.

Non-Clinical Validation of HER2.taNK, a Compelling Case for taNK and t-haNK-based Therapies

Our HER2 CAR expressing cell line has been through extensive in vitro and in vivo development spanning several years and is well published. It is based on the FRP5 scFv receptor which targets the most distal domain of human HER2 protein that sits on the surface of the cancer cell. Being the portion of the HER2 protein that is the furthest from the membrane, it serves as an ideal epitope for cell to cell engagement. Trastuzumab, on the other hand, targets HER2's most proximal domain to the membrane, which works sufficiently well for smaller molecules such as antibodies. Additionally, FRP5, has been safely administered as systemic infusions in human phase I clinical trials with no evidence of cross-reactivity with normal tissues.[1]

Over-expression of HER2 has been shown to play an important role in the development and progression of several aggressive types of cancers including breast, bladder, brain, head & neck, gastric, colon, ovarian and bladder cancers. This antigen is expressed in up to 20% of breast and up to 30% of bladder cancer patients. The overall HER2 cancer market was $6.0 billion in 2014 based on combined annual sales of Herceptin and Pertuzumab, reported in Nature Reviews Drug Discovery 14, 233-234 (2015).

[1] Source: J Clin Oncol. 2015 May 20; 33 (15): 1688-96.

Compelling in vitro and in vivo pre-clinical data has been published on our HER2.taNK cells.

The panels below show targeted killing of HER2 positive breast cancer cells (red cells) by our HER2.taNK (gray cell). Panel (a) shows how a single Her2.taNK cell safely encounters multiple Her2 negative cells (green) but once it encounters a red cell, it selectively kills it, as exhibited by the loss of td-TOMATO red dye. Panel (b) shows how a single Her2.taNK cell serially kills HER2 positive cancer cells, as exhibited by the serial loss of td-TOMATO red dye.

Source: Mol Ther. 2015 Feb;23(2):330-8

The data below demonstrate in vivo results for our HER2.taNK in a glioblastoma xenograft immune-compromised mouse model. The images on the bottom left show reduction in tumor burden from day 49 to day 84 and the symptom-free survival curve to the right shows statistically significant greater effect in the HER2.taNK treated arm compared to treatment with unmodified aNK cells and placebo.

In the another xenogeneic mouse model with Her2+ glioblastoma in which Her2.taNK cells were injected intra-tumorally, five of eight mice demonstrated tumor clearance via brain magnetic resonance imaging, or MRI, and survival, bottom left diagram, then went on to re-challenge with tumor on the opposite brain hemisphere. All five of these mice survived tumor re-challenge, bottom right diagram, which was demonstrated in the next panel to be a humoral and adaptive T-cell response mounted against the cancer.

To further characterize the anti-tumor immune response observed with taNK therapy, anti-GL261/ErbB2 IgG levels were measured and found to be significantly elevated in the immune mice, bottom left diagram. When the CD4 and CD8 T-cells were depleted, a recurrence of tumor was observed in these mice, indicating a cellular component to the immune rejection observed, bottom right diagram. Humoral and adaptive immune responses, therefore played a critical role in the achievement and maintenance of the observed vaccine effect.

Initiating First In Human Trials with HER2.taNK and other CAR Targeting Products

Our Her2.taNK product has been established as a fully compliant clinical grade master cell bank, which presently serves as an original and exclusive source of product for U.S. and European clinical trials.

Authorization was received in 2017 from the Paul-Ehrlich-Institut, or PEI, the regulatory granting agency for biologics in Germany, for the first in human phase I/II trial for HER2.taNK cells in a study called CAR2Brain.taNK for patients with recurrent glioblastoma. The first patient was dosed earlier this year with no reported adverse events.

HER2.taNK cells will soon be studied in combination with NCV agents in U.S. phase I/II trials in patients with HER2 positive breast cancer and other malignancies. Our U.S. IND submission for HER2.taNK in HER2 positive breast cancer is currently on track for filing early this year.

Additional targeted taNK and t-haNK products are currently in development for a variety of cancers. Several prominent CARs for taNK and t-haNK have been prepared and are advancing towards human-enabling and phase I clinical trials to address an even broader range of cancers in combination with the NCV regimen. CARs being developed include PD-L1, CD19, CD33, CD123, EGFR, and many others. As illustrated in the pipeline chart below, our most advanced t-haNK product, CD19.t-haNK is being prepared for an anticipated IND submission this year, which will build on earlier safety data to advance into phase II combination with commercially available antibodies, such as rituximab together with NCV.

Product Candidate Pipeline

Achievements in Process Development, Scale-Up Manufacturing and Clinical Supply

Manufacturing has been one of our fastest growing functions in 2017. We have made significant strides throughout the year in all of our core manufacturing and ancillary operational areas, including process development, scale-up manufacturing, materials sourcing, completion and certification of production facilities, all the way through and including clinical trial supply. An extensive set of manufacturing methods patent applications have been filed to protect this body of pioneering work, which will serve as an added layer of protection to our already extensive patent estate. In addition to solving critical issues relating to optimized growth conditions and maximum concentrations in culture, we have incorporated expansion protocols that have the potential to be scaled to 500 liters and beyond. High-volume continuous-flow cell harvesting and cryopreservation in individual dose forms have likewise been implemented at our current Good Manufacturing Practices, or cGMP, production facility, which has been qualifying and releasing frozen haNK for our phase I advanced solid tumor and phase II second-line pancreatic trials since the last quarter of 2017. Shelf-life stability for frozen haNK, which is currently 6+ months, continues to extend to enable the accumulation of product stockpiles for potential immediate on-demand availability. Additionally, clinical sites would no longer be required to prepare the final product formulation or conduct release testing prior to administration. Clinical sites would simply need to warm the cells in a warming bath and infuse. Simplified clinical site requirements for product administration potentially expands clinical utility well beyond select certified hospital centers and into outpatient community practices, where the patients reside.

By the end of 2017, we have successfully eliminated our dependency on expensive and over-subscribed third-party contract manufacturing vendors and we believe that we have a clear roadmap to achieve economy of scale for our haNK production. Our strategy has been to be prepared for a rapid increase in clinical product demand, as our expanded 2018 study program advances, and subsequent commercial launch. Our pilot cGMP manufacturing facility in Culver City, California, opened in 2017 and is serving as our primary production site until our high-capacity, state-of-the-art cell-based manufacturing plant in El Segundo, California, commences clinical production. The vast majority of the construction and outfitting was completed in 2017, with minor reconfiguration and certification to be completed early in 2018.

Our aNK platform production process most closely resembles that of the widely-used monoclonal antibody manufacturing process, without the challenging extraction and purification steps at the end, and bears little resemblance to the autologous CAR-T process. The figure below shows how a master cell bank is established, starting with a Chinese hamster ovary, or CHO, cell line, in the case of antibody products and with an aNK cell line in the case of haNK, taNK and t-haNK products. Both utilize genetic engineering to achieve the desired clones, which after selection, is expanded to create a master cell bank. From this point, a culture can be initiated from a single vial from the bank, which eventually can fill a bioreactor. In both cases, such a bioreactor can run for months, yielding an intermittent supply of material for harvesting. In the case of antibody products, it is the supernatant containing the antibody protein that must be separated from the cells, isolated and purified before making dose forms. In the case of haNK, the product is the cells, so they simply need to be centrifuged and washed before making dose forms. A single bioreactor can produce a sizable number of dose forms for multiple patients over the life of the culture.

The next panel below, compares the manufacturing of autologous adaptive immunotherapy of CAR-T with that of haNK, taNK and t-haNK. CAR-Ts can have high unit manufacturing costs and complex processes, including harvesting T-cells from patients in an invasive procedure called leukapheresis. Once the T-cells have been adequately collected, they are sent to the manufacturing facility to be genetically engineered and then expanded in a dedicated cGMP clean-room. Then through an elaborate series of procedures, the cells are selected using bead removal before ultimately sending the dose back to the hospital for infusion back into the original patient. Manufacturing our allogeneic “off-the-shelf” haNK, taNK and t-haNK cells involves a rapid, scalable and cost efficient process where cells from a master cell bank vial is grown in a bioreactor and once ready to harvest, the cells are centrifuged and washed before placing into final dose forms. One vial from the master cell bank can potentially produce thousands of frozen dose forms that would be ready on demand, without the 2-3 week delay in orchestrating the logistics involved with the CAR-T method.

We are also developing novel manufacturing methods, both in equipment utilizing state-of–the-art optics and proprietary media to maximize the attributes of our NK platform. We believe that this automated, closed platform manufacturing process will give us the ability to conduct manufacturing in a non-classified, lower cost manufacturing environment.

Competition

The biopharmaceutical industry is characterized by intense and dynamic competition to develop new technologies and proprietary therapies. Any product candidates that we successfully develop and commercialize will have to compete with existing therapies and new therapies that may become available in the future. We believe that our proprietary aNK platform, differentiated haNK, taNK and t-haNK product candidates, strategic collaborations and cell-based immunotherapy expertise may provide us with competitive advantages. However, we face potential competition from various sources, including larger and better-funded pharmaceutical, specialty pharmaceutical and biotechnology companies, as well as from academic institutions, governmental agencies and public and private research institutions. The key competitive factors affecting the success of any approved product will include the efficacy, safety profile, pricing, method of administration and level of promotional activity.

Our haNK, taNK and t-haNK product candidates will compete with other cell-based immunotherapy approaches using T- and dendritic cells. We are aware of companies developing product candidates focused on NK cells. These companies include Bristol-Myers Squibb, Celgene Corporation and Innate Pharma. Companies that are currently focused on T-cell based treatments include Adaptimmune Limited, Amgen Inc., Bellicum Pharmaceuticals, Inc., Bluebird Bio, Inc., Celgene Corporation, Cellectis SA, GlaxoSmithKline plc, Intrexon Corporation, Juno Therapeutics, Inc., Kite Pharma/Gilead Sciences, Novartis AG, Pfizer Inc. and Ziopharm Oncology, Inc. There is currently one approved dendritic cell-based cancer vaccine, PROVENGE, which is marketed by Valeant Pharmaceuticals for the treatment of metastatic castrate-resistant prostate cancer. Other companies focused on developing dendritic cell-based product candidates include Argos Therapeutics, Inc., Biovest International, Inc., ImmunoCellular Therapeutics, Ltd., Immune Design, Inc., Inovio Pharmaceuticals, Inc., Intrexon Corporation and Northwest Biotherapeutics, Inc.

Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and commercializing those treatments. Accordingly, our competitors may be more successful than us in obtaining approval for treatments and achieving widespread market acceptance. Our competitors' treatments may be more effective, or more effectively marketed and sold, than any treatment we may commercialize and they may render our treatments obsolete or non-competitive before we can recover the expenses of developing and commercializing any of our treatments.

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 subject 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.

We anticipate that we will face intense and increasing competition as new therapies enter the market and advanced technologies become available. We expect any treatments that we develop and commercialize to compete on the basis of, among other things, efficacy, safety, convenience of administration and delivery, price, the level of generic competition and the availability of reimbursement from government and other third-party payors.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have a better safety profile, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. In addition, we expect that our therapeutic products, if approved, will be priced at a significant premium over competitive generic products and our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of generic products.

Intellectual Property

We strive to protect and enhance the proprietary technology, inventions, and improvements that are commercially important to our business, including seeking, maintaining, and defending patent rights, whether developed internally or licensed from third parties. Our policy is to seek to protect our proprietary position by, among other methods, filing patent applications in the United States and in jurisdictions outside of the United States related to our proprietary technology, inventions, improvements, and product candidates that are important to the development and implementation of our business. We seek to consistently file follow-on patents applications on further improvements and features of our NK cell-based products, thereby adding additional layers of protection and reducing reliance on our original patents that would be the earliest to expire and may be subject to challenge. We also rely on trade secrets and know-how relating to our proprietary technology and product candidates, continuing innovation, and in-licensing

opportunities to develop, strengthen, and maintain our proprietary position in the field of NK cell-based immunotherapy. We expect to rely on data exclusivity, market exclusivity, patent term adjustment and patent term extensions when available, as well as on regulatory protection afforded through orphan drug designations. Our commercial success may depend in part on our ability to obtain and maintain patent and other proprietary protection for our technology, inventions, and improvements; to preserve the confidentiality of our trade secrets; to maintain our licenses to use intellectual property owned by third parties; to defend and enforce our proprietary rights, including our patents; and to operate without infringing on the valid and enforceable patents and other proprietary rights of third parties.

We have developed and in-licensed numerous patents and patent applications and we possess substantial know-how and trade secrets relating to the development and commercialization of NK cell-based immunotherapy product candidates, including related manufacturing processes and technology. As of December 31, 2017, our owned and licensed patent portfolio consists of patents and pending patent applications in the U.S. disclosing subject matter directed to certain of our proprietary technology, inventions, and improvements and our most advanced product candidates, as well as licensed and owned patents and pending applications in jurisdictions outside of the U.S., that, in many cases, are counterparts to the foregoing U.S. patents and patent applications. For example, these patents and patent applications include claims directed to:

- Natural Killer Cell Lines and Methods of Use;
- Treatment of Cancer using Natural Killer Cell Lines;
- Treatment of Specific Diseases using Natural Killer Cell Lines;
- Combination Therapy using Natural Killer Cell Lines;
- NK-92 Cells in Combination Therapy with Cancer Drugs;
- Tumoricidal and Antimicrobial Compositions and Methods;
- Modified NK-92 Cells for Treating Cancer;
- Genetically Modified Human Natural Killer Cell Lines;
- Genetically Modified NK-92 Cells and Monoclonal Antibodies for Treatment of Cancer;
- Antibody fragments that specifically bind to human ErbB2;
- CAR-Expressing NK-92 Cells as Cell Therapeutic Agents;
- Chimeric Antigen Receptors with an Optimized Hinge Region;
- Treatment of Viral and Bacterial Diseases using Natural Killer Cell Lines;
- Treating Viral Hemorrhagic Fever with NK-92 Cells; and
- Methods for Expansion and Commercial Manufacture.

As for the NK cell-based immunotherapy products and processes we develop and commercialize, in the normal course of business, we intend to pursue, when possible, composition, method of use, dosing and formulation patent protection. We may also pursue patent protection with respect to manufacturing and drug development processes and technology. The patents and patent applications outside of the U.S. in our portfolio are held primarily in Europe, Canada, Australia, China, Japan and Korea.

Individual patents extend for varying periods of time, depending upon the date of filing of the patent application, the date of patent issuance, and the legal term of patents in the countries in which they are obtained. Generally, patents issued for applications filed in the United States are effective for 20 years from the earliest effective filing date. The patent term may be adjusted to compensate for delayed patent issuance, when such delays are caused by the patent office or successful appeals against patent office actions. There is no limit on this patent term adjustment. In addition, in certain instances, a patent term can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period. The restoration period cannot be longer than five years and the total patent term, including the restoration period, must not exceed 14 years following FDA approval. The duration of patents outside of the United States varies in accordance with provisions of applicable local law, but typically is also 20 years from the earliest effective filing date. Our issued patents will expire on dates ranging from 2018 to 2032. If patents are issued on our pending patent applications, the resulting patents are projected to expire on dates ranging from 2018 to 2036. However, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country, and the validity and enforceability of the patent.

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the scope of claims allowable in patents in the field of immunotherapy has emerged in the United States. The patent situation outside of the United States is even more uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our inventions and enforce our intellectual property rights, and more generally could affect the value of our intellectual property. In particular, our ability to stop third parties from making, using, selling, offering to sell, or importing products that infringe our intellectual property will depend in part on our success in obtaining and enforcing patent claims that cover our technology, inventions, and improvements. 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 products and the methods used to manufacture those products. Moreover, even our issued patents do not guarantee us the right to practice our technology in relation to the commercialization of our products. However, the area of patent and other intellectual property rights in biotechnology is an evolving one with many risks and uncertainties, and third parties may have blocking patents that could be used to prevent us from commercializing our patented product candidates and practicing our proprietary technology. Our issued patents and those that may issue in the future may be challenged, invalidated, or circumvented, which could limit our ability to stop competitors from marketing related products or limit the length of the term of patent protection that we may have for our product candidates. In addition, the rights granted under any issued patents may not provide us with protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies. For these reasons, we may have competition for our product candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any particular product candidate can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent.

As of December 31, 2017, our registered trademark portfolio contained ten registered trademarks in the United States, 20 registered trademarks in foreign jurisdictions (four of which are Madrid Protocol trademarks), four pending trademark applications in the United States, and 13 pending trademark applications in foreign jurisdictions. We may also rely, in some circumstances, on trade secrets to protect our technology. However, trade secrets are difficult to protect. We seek to protect our technology and product candidates, in part, by entering into confidentiality agreements with those who have access to our confidential information, including our employees, contractors, consultants, collaborators, and advisors. We also seek to preserve the integrity and confidentiality of our proprietary technology and processes by maintaining physical security of our premises and physical and electronic security of our information technology systems. Although 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 may be independently discovered by competitors. To the extent that our employees, contractors, consultants, collaborators, and advisors 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. For risks related to our proprietary technology, inventions, improvements and products, please see the section on “Risk Factors—Risks Related to Intellectual Property” and “Legal Proceedings.”

Collaboration Agreements

Altor BioScience Corporation. In August 2016, we entered into an exclusive Co-Development Agreement, or the Co-Development Agreement, with Altor Bio Science Corporation, or Altor. Our Chairman and CEO is also the Chairman of Altor and holds a greater than 20% ownership interest therein. Under the Co-Development Agreement, we agreed with Altor to exclusively collaborate on the development of therapeutic applications combining the Company’s proprietary natural killer cells with Altor's ALT-801 and/or ALT-803 products with respect to certain technologies and intellectual property rights as may be agreed between the parties for the purpose of jointly developing therapeutic applications of certain effector cell lines.

We will be the lead developer for each product developed by the parties pursuant to the Co-Development Agreement unless otherwise agreed to under a given project plan. Under the terms of the Co-Development Agreement, both parties will grant a co-exclusive, royalty free, fully paid-up, worldwide license, with the right to sublicense (only to a third-party contractor assisting with research and development activities under this C/o-Development Agreement and subject to prior consent, not to be unreasonably withheld), under the intellectual property, or IP, including the parties interest in the joint IP, solely to conduct any development activities agreed to by the steering committee as set forth in any development plan. Unless otherwise mutually agreed by the parties in the development plan for a project, we shall be responsible for all costs and expenses incurred by either party related to conducting clinical trials and other activities under each development program, including costs associated with patient enrollment, materials and supplies, third-party staffing, and regulatory filings.

Each company will own an undivided interest in and to all rights, title and interest in and to the joint product rights. The Co-Development Agreement expires upon the fifth anniversary of the effective date. We dosed several patients with ALT-803 in our phase II Merkel cell carcinoma and our phase Ib/II pancreatic cancer trials under the Co-Development Agreement during the year ended December 31, 2017.

Licenses

Viracta. In May 2017, we entered into an agreement with Viracta to grant us exclusive world-wide rights to Viracta's phase II drug candidate, VRx-3996, for use in combination with our platform of natural killer cell therapies. Our Chairman and CEO is also the Vice Chairman of Viracta. In consideration for the license, we are obligated to pay to Viracta (i) mid-single digit percentage royalties of net sales of licensed products for therapeutic use; and (ii) milestone payments ranging from $10.0 million to $25.0 million for various regulatory approvals and cumulative net sales levels. We may terminate the agreement, in our sole discretion, in whole or on a product by product and/or country by country basis, at any time upon 90 days' prior written notice. In addition, either party may terminate the agreement in the event of a material breach or for bankruptcy of the other party.

Hans G. Klingemann, M.D., Ph.D. We hold the worldwide rights, title and interest to the NK-92 cell line and we believe that we control commercial use of our NK-92 cells in key territories. We also maintain and exclusively control the only clinical grade master cell bank for NK-92. The original NK-92 cell line was isolated by Hans G. Klingemann, M.D., Ph.D., our founder and Vice President of Research and Development, and all patents and patent applications pertaining to this cell line are now in the name of NantKwest, Inc. or ZelleRx Corporation, our former name. In February 2003, we obtained an exclusive, worldwide license from Dr. Klingemann to the NK-92 cell line, and related NK-92 patents and know-how, including the NK-92 cell line, that had been assigned to him by the British Columbia Cancer Agency, to manufacture, use and sell products covered by the scope of any valid claim in any of the licensed patents. Dr. Klingemann subsequently assigned the cell line and those patents to us, but we are still obligated to pay a single-digit royalty on sales of licensed products to Dr. Klingemann, as well as to pay the British Columbia Cancer Agency a small percentage of our profits from the sale of the NK-92 cell line that Dr. Klingemann obtained from them.

Fox Chase Cancer Center. In July 2004, we entered into an exclusive license agreement with Fox Chase Cancer Center or Fox Chase, pursuant to which we were granted an exclusive, worldwide, sublicensable license under certain patents and know-how pertaining to CD16 receptors-bearing NK-92 cell lines. We agreed to pay Fox Chase low single-digit royalties on sales of licensed products. We are also obligated to pay Fox Chase a percentage of the royalties and other compensation we receive from sublicensees of our rights from Fox Chase. Fox Chase is obligated to assign the licensed patents to us if we commence a phase III clinical trial of a licensed product and, if this does not occur, our license expires when the last of the licensed patents expires.

Rush University Medical Center. In March 2004, we entered into a license agreement with Rush University Medical Center pursuant to which Rush granted us an exclusive, worldwide, sublicensable license to certain intellectual property related to clinical use of NK-92 to develop and commercialize products and processes for the treatment of melanoma renal cancer, or for the diagnosis or treatment of non-melanoma and non-renal cancer. In consideration for the license, we are obligated to pay to Rush single-digit royalties on sales of licensed products with a minimum royalty payment of $25,000 per year, as well as non-material milestone payments upon completion of certain clinical, regulatory and commercialization milestones. We also agreed to pay to Rush a portion of certain payments that we receive under sublicensing arrangements. The license has a term of 12 years from 2006, the year in which royalty payments were first made, and includes customary termination rights for us and Rush.

University Health Network. In May 2005, we entered into a license agreement with University Health Network, or UHN, pursuant to which we obtained from UHN an exclusive, worldwide, sublicensable license to certain intellectual property relating to NK-92 clinical trials data from UHN to develop and commercialize products and processes for the diagnosis and treatment of certain hematological malignancies. Our license from UHN will automatically expire if we have not filed for regulatory approval or launched a licensed product within specified periods of time, and also includes other customary termination rights for both us and UHN.

Joint Development and License Agreements

Sorrento Therapeutics, Inc. In December 2014, the Company entered into a Joint Development and License Agreement with Sorrento Therapeutics, Inc., or Sorrento. The agreement expired in December 2017. Since no joint product candidates were identified during the exclusive term, Sorrento has no rights to use the Company's NK cells or other technologies or intellectual property rights or to begin related research, development or commercialization activities and the Company is free to pursue, and is actively pursuing, research, development and commercialization activities with antibodies that may bind to various targets, including PDL1, CD19 and FLT3.

Intrexon Corporation. In February 2010, we entered into a 17-year agreement with Intrexon Corporation, or Intrexon, pursuant to which we granted to Intrexon a worldwide, sublicensable license which may be exclusive with respect to certain indications designated by Intrexon, under certain patents relating to NK-92 cells to develop and commercialize modified NK-92 cells that express Intrexon's proprietary gene sequences for use as therapeutic and prophylactic agents in humans in specified therapeutic areas. Intrexon paid us a one-time license fee and is also obligated to pay non-material milestone payments with respect to specific indications, a royalty on net sales of the licensed products and a portion of the revenue Intrexon receives from third party sublicensees of its rights from us. Intrexon has the right to terminate the agreement upon 180 days' notice and both Intrexon and we have the right to terminate the agreement for the other's uncured breach of the agreement.

We have licensed or sub-licensed our cell lines and intellectual property to numerous other pharmaceutical and biotechnology companies for non-clinical uses such as laboratory testing. Such licenses generally require the licensee to pay an upfront fee and annual research and commercial fees for products sold using our intellectual property and cell lines.

GSH and DRK-Blutspendedienst Baden-Wurttemberg-Hessen gGmbH, or BSD, License Agreement. In August 2015, we entered into a license agreement with GSH and BSD under which we were granted an exclusive license to certain GSH-BSD patents, materials and know-how that specifically targets ErbB2 expressing cancers. In addition, GSH granted us an exclusive license to certain GSH only technology and materials. In consideration for the licenses, we agreed to pay initial and annual licensing fees, regulatory and commercial milestones and low single-digit percentage royalties on net sales of licensed products. The royalty term shall continue in a particular country until the later of (i) the expiration of the valid patent claims in such country, or (ii) a specified period of time after the first commercial sale of licensed product in such country. The license agreement shall continue until no further payments are due at which time the licenses and rights will continue on a non-exclusive, royalty-free basis. The license agreement can be terminated earlier: (i) for material breach by either party after 60 days cure period, (ii) if we declare bankruptcy or insolvency, (iii) by us at our sole discretion upon 60 days prior written notice. We paid and expensed $1.1 million for the initial license fees in 2015 under the license, which was included in research and development expense on the consolidated statement of operations for year ended December 31, 2015. Annual license fees under the agreement begin in 2018.

During the third quarter of 2017, GSH reached the first regulatory milestone of a receipt of the first Institutional Review Board, or IRB, approval for the phase I Glioblastoma Study. We expensed $0.9 million for the first milestone payment under the agreement, which is included in research and development expenses on the consolidated statements of operations for the year ended December 31, 2017.

Anticipated Agreements and Considerations

In addition to the collaboration agreement and license agreements discussed above, we may enter into an agreement relating to an IL-15 superagonist product developed by an affiliate and we are also pursuing supply arrangements for various investigational agents controlled by affiliates and third parties to be used in our clinical trials. These collaboration agreements do not typically specify how sales will be apportioned between the parties upon successful commercialization of the product. As a result, we cannot guarantee that we will receive a percentage of the revenue that is at least proportional to the costs that we will incur in commercializing the product candidate. Furthermore, if Dr. Soon-Shiong was to cease his affiliation with us or with NantWorks, these entities may be unwilling to continue these relationships with us on commercially reasonable terms, or at all, and as a result may impede our ability to control the supply chain for our combination therapies.

Government Regulation

The FDA and other regulatory authorities at federal, state, and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring, and post-approval reporting of biologics such as those we are developing. We, along with third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our product candidates. 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.

The process required by the FDA before biologic product candidates may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests and animal studies performed in accordance with the FDA's current Good Laboratory Practices, or cGLP, regulation;
- submission to the FDA of an IND, which must become effective before clinical trials may begin and must be updated annually or when significant changes are made;
- approval by an independent Institutional Review Board, or IRB, or ethics committee for each clinical site before the clinical trial is begun;
- performance of adequate and well-controlled human clinical trials to establish the safety, purity and potency of the proposed biologic product candidate for its intended purpose;
- preparation of and submission to the FDA of a BLA after completion of all required clinical trials;
- a determination by the FDA within 60 days of its receipt of a BLA to file the application for review;

- satisfactory completion of an FDA Advisory Committee review, if applicable;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the proposed product is produced to assess compliance with cGMP and to assure that the facilities, methods and controls are adequate to preserve the biological product's continued safety, purity and potency, and of selected clinical investigational sites to assess compliance with current Good Clinical Practices, or cGCPs; and
- FDA review and approval of the BLA to permit commercial marketing of the product for particular indications for use in the United States, which must be updated annually and when significant changes are made.

The testing and approval process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our product candidates will be granted on a timely basis, if at all. Prior to beginning the first clinical trial with a product candidate, we must submit an IND to the FDA. An IND is a request for authorization from the FDA to administer an investigational new drug product to humans. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical studies. The IND also includes results of animal and in vitro studies assessing the toxicology, pharmacokinetics, pharmacology, and pharmacodynamic characteristics of the product; chemistry, manufacturing, and controls information; and any available human data or literature to support the use of the investigational product. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

When a clinical trial using genetically engineered cells is conducted at, or sponsored by, institutions receiving National Institutes of Health, or NIH, funding for recombinant DNA research, prior to the submission of an IND to the FDA, a protocol and related documentation is submitted to and the study is registered with the NIH Office of Biotechnology Activities, or OBA, pursuant to the NIH Guidelines for Research Involving Recombinant DNA Molecules, or NIH Guidelines. Compliance with the NIH Guidelines is mandatory for investigators at institutions receiving NIH funds for research involving recombinant DNA, and many companies and other institutions not otherwise subject to the NIH Guidelines voluntarily follow them. The NIH is responsible for convening the Recombinant DNA Advisory Committee, or RAC, a federal advisory committee that discusses protocols that raise novel or particularly important scientific, safety, or ethical considerations at one of its quarterly public meetings. The OBA will notify the FDA of the RAC's decision regarding the necessity for full public review of a protocol. RAC proceedings and reports are posted to the OBA web site and may be accessed by the public. If the FDA allows the IND to proceed, but the RAC decides that full public review of the protocol is warranted, the FDA will request at the completion of its IND review that sponsors delay initiation of the protocol until after completion of the RAC review process.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with cGCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent Institutional Review Board, or IRB, for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed. Regulatory authorities, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing clinical studies and clinical study results to public registries.

For purposes of BLA approval, human clinical trials are typically conducted in three sequential phases that may overlap.

- Phase I. 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, the initial human testing is often conducted in patients.
- Phase II. 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 III. 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.

- Phase IV. In some cases, the FDA may require, or companies may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called phase IV studies may be made a condition to approval of the BLA.

Phase I, phase II and phase III testing may not be completed successfully within a specified period, if at all, and there can be no assurance that the data collected will support FDA approval or licensure of the product. Concurrent with clinical trials, companies may complete additional animal studies and develop additional information about the biological characteristics of the product candidate, and must 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 Public Health Service Act, or 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, must develop methods for testing the identity, strength, quality and purity of the final product, or for biologics, the safety, purity and potency. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

BLA Submission and Review by the FDA

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, nonclinical studies and clinical trials are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications. The BLA must include all relevant data available from pertinent preclinical and clinical studies, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. Data can come from company-sponsored clinical studies intended to test the safety and effectiveness of a use of the product or from a number of alternative sources, including studies initiated by investigators. The submission of a BLA requires payment of a substantial User Fee to the FDA, and the sponsor of an approved BLA is also subject to annual product and establishment user fees. These fees are typically increased annually. A waiver of user fees may be obtained under certain limited circumstances.

Within 60 days following submission of the application, the FDA reviews a BLA 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. Once a BLA has been filed, the FDA's goal is to review the application within ten months after it accepts the application for filing, or, if the application relates to an unmet medical need in a serious or life-threatening indication, six months after the FDA accepts the application for filing. The review process is often significantly extended by FDA requests for additional information or clarification. The FDA reviews a BLA to determine, among other things, whether a product is safe, pure and potent and the facility in which it is manufactured, processed, packed, or held meets standards designed to assure the product's continued safety, purity and potency. The FDA may convene an advisory committee to provide clinical insight on application review questions. Before approving a BLA, the FDA will typically inspect the facility or facilities where the product is manufactured. The FDA will not approve an application 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. 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 compliance with cGCP. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

The testing and approval process requires substantial time, effort and financial resources, and each may take several years to complete. The FDA may not grant approval on a timely basis, or at all, and we may encounter difficulties or

unanticipated costs in our efforts to secure necessary governmental approvals, which could delay or preclude us from marketing our products. After the FDA evaluates a BLA and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be produced, the FDA may issue an approval letter, a Complete Response Letter or a not approval letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter may request additional information or clarification. The FDA may delay or refuse approval of a BLA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the BLA with a Risk Evaluation and Mitigation Strategy, or REMS, plan to mitigate risks, which could include medication guides, physician communication plans, or other restrictions to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing regulatory standards is not maintained or if problems occur after the product reaches the marketplace. The FDA may require one or more phase IV post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies. In addition, 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.

A sponsor may seek approval of its product candidate under programs designed to accelerate FDA's review and approval of new drugs and biological products that meet certain criteria. Specifically, new drugs and biological products are eligible for fast track designation if they are intended to treat a serious or life-threatening condition and demonstrate the potential to address unmet medical needs for the condition. For a fast track product, the FDA may consider sections of the BLA for review on a rolling basis before the complete application is submitted if relevant criteria are met. A fast track designated product candidate may also qualify for priority review, under which the FDA sets the target date for FDA action on the BLA at six months after the FDA accepts the application for filing. Priority review is granted when there is evidence that the proposed product would be a significant improvement in the safety or effectiveness of the treatment, diagnosis, or prevention of a serious condition. If criteria are not met for priority review, the application is subject to the standard FDA review period of 10 months after FDA accepts the application for filing. Priority review designation does not change the scientific/medical standard for approval or the quality of evidence necessary to support approval.

Under the accelerated approval program, the FDA may approve a BLA on the basis of either a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. Post-marketing studies or completion of ongoing studies after marketing approval are generally required to verify the biologic's clinical benefit in relationship to the surrogate endpoint or ultimate outcome in relationship to the clinical benefit. In addition, the Food and Drug Administration Safety and Innovation Act, or FDASIA, which was enacted and signed into law in 2012, established breakthrough therapy designation. A sponsor may seek FDA designation of its product candidate as a breakthrough therapy if the product candidate is intended, alone or in combination with one or more other drugs or biologics, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the therapy may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Sponsors may request the FDA to designate a breakthrough therapy at the time of or any time after the submission of an IND, but ideally before an end-of-phase II meeting with FDA. If the FDA designates a breakthrough therapy, it may take actions appropriate to expedite the development and review of the application, which may include holding meetings with the sponsor and the review team throughout the development of the therapy; providing timely advice to, and interactive communication with, the sponsor regarding the development of the drug to ensure that the development program to gather the nonclinical and clinical data necessary for approval is as efficient as practicable; involving senior managers and experienced review staff, as appropriate, in a collaborative, cross-disciplinary review; assigning a cross-disciplinary project lead for the FDA review team to facilitate an efficient review of the development program and to serve as a scientific liaison between the review team and the sponsor; and considering alternative clinical trial designs when scientifically appropriate, which may result in smaller or more efficient clinical trials that require less time to complete and may minimize the number of patients exposed to a potentially less efficacious treatment. Breakthrough designation also allows the sponsor to file sections of the BLA for review on a rolling basis. We may seek designation as a breakthrough therapy for some or all of our product

candidates.

Fast Track designation, priority review and breakthrough therapy designation do not change the standards for approval but may expedite the development or approval process.

Orphan Drugs

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 individuals in the United States and when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States 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.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient 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 or if FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the 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 many 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, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Post-Approval Requirements

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record-keeping, reporting of adverse experiences, periodic reporting, distribution, and advertising and promotion of the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual user fee requirements for any marketed products and the establishments at which such products are manufactured, as well as new application fees for supplemental applications with clinical data. Biologic manufacturers and their subcontractors 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, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements upon us and any third-party manufacturers that we may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance. We cannot be certain that we or our present or future suppliers will be able to comply with the cGMP regulations and other FDA regulatory requirements. If our present or future suppliers are not able to comply with these requirements, the FDA may, among other things, halt our clinical trials, require us to recall a product from distribution, or withdraw approval of the BLA.

Future FDA and state inspections may identify compliance issues at our facilities or at the facilities of our contract manufacturers that may disrupt production or distribution, or require substantial resources to correct. In addition, discovery of previously unknown problems with a product or the failure to comply with applicable requirements may result in restrictions on a product, manufacturer or holder of an approved BLA, including withdrawal or recall of the product from the market or other voluntary, FDA-initiated or judicial action that could delay or prohibit further marketing.

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

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical studies;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

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The FDA closely regulates the marketing, labeling, advertising and promotion of biologics. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties, and exclusion from participation in governmental health programs, like Medicare and Medicaid. Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, restrict manufacturer's communications on the subject of off-label use of their products.

Other Healthcare Laws and Compliance Requirements

Our sales, promotion, medical education, clinical research and other activities following product approval will be subject to regulation by numerous regulatory and law enforcement authorities in the United States in addition to FDA, including potentially the Federal Trade Commission, the Department of Justice, the Centers for Medicare and Medicaid Services, or CMS, other divisions of the U.S. Department of Health and Human Services and state and local governments. Our promotional and scientific/educational programs must comply with the federal Anti-Kickback Statute, the False Claims Act, physician payment transparency laws, privacy laws, security laws, and additional federal and state laws similar to the foregoing.

The federal Anti-Kickback Statute prohibits, among other things, the knowing and willing, direct or indirect offer, receipt, solicitation or payment of remuneration in exchange for or to induce the referral of patients, including the purchase, order or lease of any good, facility, item or service that would be paid for in whole or part by Medicare, Medicaid or other federal health care programs. Remuneration has been broadly defined to include anything of value, including cash, improper discounts, and free or reduced price items and services. The federal Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, formulary managers, and beneficiaries on the other. Although 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. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the federal 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 its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean that if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the federal Anti-Kickback Statute has been violated. The government has enforced the federal Anti-Kickback Statute to reach large settlements with healthcare companies based on sham research or consulting and other financial arrangements with physicians. Further, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act. Many states have similar laws that apply to their state health care programs as well as private payors.

Federal false claims and false statement laws, including the federal civil False Claims Act, or FCA, imposes liability on persons or entities that, among other things, knowingly present or cause to be presented claims that are false or fraudulent or not provided as claimed for payment or approval by a federal health care program. The FCA has been used to prosecute persons or entities that "cause" the submission of claims for payment that are inaccurate or fraudulent, by, for example, providing inaccurate billing or coding information to customers, promoting a product off-label, submitting claims for services not provided as claimed, or submitting claims for services that were provided but not medically necessary. Actions under the FCA may be brought by the Attorney General or as a qui tam action by a

private individual in the name of the government. Violations of the FCA can result in significant monetary penalties and treble damages. The federal government is using the FCA, and the accompanying threat of significant liability, in its investigation and prosecution of pharmaceutical and biotechnology companies throughout the country, for example, in connection with the promotion of products for unapproved uses and other illegal sales and marketing practices. The government has obtained multi-million and multi-billion dollar settlements under the FCA in addition to individual criminal convictions under applicable criminal statutes. In addition, certain companies that were found to be in violation of the FCA have been forced to implement extensive corrective action plans and have often become subject to consent decrees or corporate integrity agreements, restricting the manner in which they conduct their business.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors; knowingly and willfully falsifying, concealing or covering up 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; and willfully obstructing a criminal investigation of a healthcare offense. Like the federal Anti-Kickback Statute, the Affordable Care Act amended the intent standard for certain healthcare fraud statutes under HIPAA such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

Given the significant size of actual and potential settlements, it is expected that the government will continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws. Also, many states have similar fraud and abuse statutes or regulations that may be broader in scope and may apply regardless of payor, in addition to items and services reimbursed under Medicaid and other state programs. Additionally, to the extent that our products, once commercialized, are sold in a foreign country, we may be subject to similar foreign laws.

In addition, there has been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the Affordable Care Act, among other things, imposed new reporting requirements on certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, for payments or other transfers of value made by them to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Covered manufacturers are required to collect and report detailed payment data and submit legal attestation to the accuracy of such data to the government each year. Failure to submit required information may result in civil monetary penalties of up to an aggregate of $150,000 per year (or up to an aggregate of $1 million per year for "knowing failures"), for all payments, transfers of value or ownership or investment interests that are not timely, accurately and completely reported in an annual submission. Additionally, entities that do not comply with mandatory reporting requirements may be subject to a corporate integrity agreement. Certain states also mandate implementation of commercial compliance programs, impose restrictions on covered manufacturers' marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians and other healthcare professionals.

We may also be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology and Clinical Health Act, or HITECH, and their respective implementing regulations, imposes specified requirements on certain health care providers, plans and clearinghouses (collectively, "covered entities") and their "business associates," relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce HIPAA and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, certain states have their own laws that govern the privacy and security of health information in certain circumstances, many of which differ from each other and/or HIPAA in significant ways and may not have the same effect, thus complicating compliance efforts.

If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, disgorgement, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs, imprisonment, contractual damages, reputational harm, and diminished profits and future earnings, any of which could adversely affect our ability to operate our business and our financial results.

In addition to the foregoing health care laws, we are also subject to the U.S. Foreign Corrupt Practices Act, or FCPA, and similar worldwide anti-bribery laws, which generally prohibit companies and their intermediaries from making improper payments to government officials or private-sector recipients for the purpose of obtaining or retaining business. We adopted an anti-corruption policy in connection with the initial public offering of our common stock in July 2015. The anti-corruption policy mandates compliance with the FCPA and similar anti-bribery laws applicable to our business throughout the world. However, we cannot assure you that such a policy or procedures implemented to enforce such a policy will protect us from intentional, reckless or negligent acts committed by our employees, distributors, partners, collaborators or agents. Violations of these laws, or allegations of such violations, could result in fines, penalties or prosecution and have a negative impact on our business, results of operations and reputation.

Coverage and Reimbursement

Sales of pharmaceutical products depend significantly on the extent to which coverage and adequate reimbursement are provided by third-party payors. Third-party payors include state and federal government health care programs, managed care providers, private health insurers and other organizations. Although we currently believe that third-party payors will provide coverage and reimbursement for our product candidates, if approved, we cannot be certain of this. Third-party payors are increasingly challenging the price, examining the cost-effectiveness, and reducing reimbursement for medical products and services. In addition, significant uncertainty exists as to the reimbursement status of newly approved healthcare products. The U.S. government, state legislatures and foreign governments have continued implementing cost containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Adoption of price controls and cost containment measures and adoption of more restrictive policies in jurisdictions with existing controls and measures could further limit our net revenue and results. We may need to conduct expensive clinical studies to demonstrate the comparative cost-effectiveness of our products. The product candidates that we develop may not be considered cost-effective and thus may not be covered or sufficiently reimbursed. It is time consuming and expensive for us to seek coverage and reimbursement from third-party payors, as each payor will make its own determination as to whether to cover a product and at what level of reimbursement. Thus, one payor's decision to provide coverage and adequate reimbursement for a product does not assure that another payor will provide coverage or that the reimbursement levels will be adequate. Moreover, a payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Reimbursement may not be available or sufficient to allow us to sell our products on a competitive and profitable basis.

Healthcare Reform

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

By way of example, in March 2010, the Affordable Care Act was signed into law, intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. Among the provisions of the Affordable Care Act of importance to our potential drug candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- 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 a manufacturer's outpatient drugs to be covered under Medicare Part D;
- extension of a manufacturer's 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 certain individuals with

income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's 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 clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. These changes include, among others, the Budget Control Act of 2011, which mandates aggregate reductions to Medicare payments to providers of up to 2% per fiscal year effective April 1, 2013, and, due to subsequent legislative amendments, will remain in effect through 2024 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on customers for our product candidates, if approved, and, accordingly, our financial operations.

We expect that the Affordable Care Act, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and lower reimbursement and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our drugs. Furthermore, the current presidential administration and Congress are also expected to attempt broad sweeping changes to the current health care laws. We face uncertainties that might result from modifications or repeal of any of the provisions of the Affordable Care Act, including as a result of current and future executive orders and legislative actions. The impact of those changes on us and potential effect on the pharmaceutical and biotechnology industries as a whole is currently unknown. But, any changes to the Affordable Care Act are likely to have an impact on our results of operations and may have a material adverse effect on our results of operation. We cannot predict what other healthcare programs and regulations will ultimately be implemented at the federal or state level or the effect of any future legislative or regulation in the United States may have on our business.

Foreign Regulation

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our products to the extent we choose to develop or sell any products outside of the United States. The approval process varies from country to country and the time may be longer or shorter than that required to obtain FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country.

Germany

We filed an application to commence clinical studies in Germany with the German federal institute for vaccines and biomedicines, or the PEI, the regulatory Agency of the German Federal Ministry of Health. Clinical trials shall be performed to allow data on the safety and efficacy of the relevant medicinal product to be collected. The results of the clinical trial must subsequently be included in the application for marketing authorization and are assessed by the regulatory authorities. The entity responsible for a clinical trial application and its subsequent conduct is called the “sponsor” in accordance with European Union Law. The role of the clinical trial sponsor goes beyond the actual financing and extends to the overall responsibility for the proper conduct of the clinical trial including the proper manufacturer and labelling of the investigational medicinal product.

The process required by applicable law before a clinical trial with an investigational biologic product candidates may commence generally involves the following:

- a legal representative situated within the European Economic Area, if the sponsor`s registered place of business is situated outside the European Union;
- approval by the respective competent federal higher authority (for biological products the PEI);
- a favorable opinion from the ethics committee competent for the federal state where the study is conducted;

- an insurance policy in favor of the clinical trial participants in the event that a person is killed or a person's body or health is injured during the course of the clinical trial, which provides benefits (at least 500,000 € for each case), even when no one else is liable for the damage, with an insurance carrier authorized to conduct business in a Member State of the European Union or another State Party to the Agreement on the European Economic Area;
- the clinical trial participants informed consent documented in writing, including the purpose and scope of the recording and use of personal data, especially medical data;
- as part of an initial clinical trial application, a signed clinical trial protocol, the investigator`s brochure, an investigational medicinal product dossier regarding manufacturing and quality including the result of a pharmacological-toxicological test of the medicinal product in accordance with the prevailing state of scientific knowledge and a stability protocol for the biological investigational medicinal product; and

- reporting of ongoing clinical studies and subsequently clinical study results to the EudraCT-register of the European Medicines Agency (EMA).

When assessing the application for approval of a clinical trial involving an investigational biological product, the PEI and the ethics committee will consider the following:

- when the investigational medical product is using genetically modified organisms, unjustifiable harmful effects on the health of third persons or the environment may not to be expected;
- medical justifiability of the foreseeable risks and inconveniences, compared with the benefit for the clinical trial participants, and the anticipated significance of the medicinal product for medical science;
- conduct of the clinical trial in an appropriate facility by a suitably qualified investigator and the trial is managed by an investigator who can provide evidence of at least two years' experience in the clinical trial of medicinal products; and
- a plan for the further medical treatment and supervision of the clinical trial participants after the end of the clinical trial in accordance with the GCP Ordinance - GCP-V.

When the investigational medical product is a somatic cell therapeutics, after the confirmation of receipt of the application dossier conforming to the regulations, the period of time for the evaluation of the contents by the PEI is ninety days. The PEI might only accept the application subject to certain conditions. The conduct of a clinical trial consists of four phases (I. to IV.). The character of phase I to phase IV are similar to those described above. During the course of the clinical trial, the sponsor is obliged to promptly notify the PEI and ethics committee of unexpected adverse events and/or of any amendment to the clinical trial protocol.

Employees

As of December 31, 2017, we had 139 employees. Personnel of related companies who provide corporate, general and administrative, manufacturing strategy, research and development, regulatory and clinical trial strategy and other support services under our shared services agreement with NantWorks, LLC, are not included in this number. See Note 9 Related Party Agreements of the “Notes to Consolidated Financial Statements” for further information. Our ability to manage growth effectively will require us to continue to implement and improve our management systems, recruit and train new employees and select qualified independent contractors. None of our employees are represented by a labor union or covered by collective bargaining agreements, and we believe our relationship with our employees is good.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described below, as well as other information included in this Annual Report on Form 10-K, or Annual Report, including our financial statements and the related notes, and the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” any of which may be relevant to decisions regarding an investment in or ownership of our stock. The occurrence of any of these risks could have a significant adverse effect on our reputation, business, financial condition, results of operations, growth and ability to accomplish our strategic objectives. We have organized the description of these risks into groupings in an effort to enhance readability, but many of the risks interrelate or could be grouped or ordered in other ways, so no special significance should be attributed to the groupings or order below.

Risks Related to Our Financial Condition and Capital Requirements

We are a clinical-stage biopharmaceutical company with a limited operating history and have incurred significant losses since our inception, and we anticipate that we will continue to incur losses for the foreseeable future, which makes it difficult to assess our future viability.

We are a clinical-stage biopharmaceutical company with a limited operating history upon which our business can be evaluated. To date, we have generated minimal revenue from non-exclusive license agreements with biopharmaceutical companies to which we have granted the right to use our cell lines and intellectual property for non-clinical laboratory testing, and we have no products approved for commercial sale and have not generated any revenue from product sales. We have incurred operating losses on an annual basis since our formation and we may never become profitable. As of December 31, 2017, we had an accumulated deficit of approximately $498.7 million. We incurred net losses of $96.4 million, $120.8 million, and $236.9 million for the years ended December 31, 2017, 2016 and 2015, respectively. Our losses have resulted principally from costs incurred in ongoing preclinical studies, clinical trials and operations, research and development expenses, as well as general and administrative expenses.

A critical aspect of our strategy is to invest significantly in expanding our haNK and taNK platforms and the development of our product candidates. We expect to incur significant expenses as we continue to expand our business, including in connection with conducting research and development across multiple therapeutic areas, participating in clinical trial activities, continuing to acquire or in-license technologies, maintaining, protecting and expanding our intellectual property, seeking regulatory approvals and, upon successful receipt of the Federal Drug Administration, or FDA, approval, commercializing our products. We will also incur costs as we hire additional personnel and increase our manufacturing capabilities, including potentially pursuant to the lease or purchase of a facility, for the manufacturing of our product candidates for our planned clinical trials and, upon potential receipt of FDA approval, for our initial commercialization activities. Moreover, we do not expect to have any significant product sales or revenue for a number of years. These losses have had and, as our operating losses continue to increase significantly in the future due to these expenditures, will continue to have an adverse effect on our stockholders' equity and working capital. Because of the numerous risks and uncertainties associated with our product development efforts, we are unable to predict when we may become profitable, if at all. Additionally, our net losses may fluctuate significantly from quarter to quarter, and as a result a period to period comparison of our results of operations may not be meaningful. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

We do not have any therapeutic products that are approved for commercial sale. Our ability to generate revenue from product sales and achieve and maintain profitability depends significantly on our success in a number of factors.

We currently do not have any therapeutic products that are approved for commercial sale. We have not received, and do not expect to receive for at least the next several years, if at all, any revenues from the commercialization of our product candidates if approved. To obtain revenue from sales of our product candidates that are significant or large enough to achieve profitability, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing and marketing therapies with commercial potential. Our ability to generate revenue and achieve and maintain profitability depends significantly on our success in many areas, including:

- our research and development efforts, including preclinical studies and clinical trials of our haNK and taNK platforms and our product candidates;
- developing sustainable, scalable, reliable and cost-effective manufacturing and distribution processes for our product candidates, including establishing and maintaining commercially viable supply relationships with third parties and establishing our own current Good Manufacturing Practices, or cGMP, manufacturing facilities and processes;
- addressing any competing technological and industry developments;
- identifying, assessing, acquiring and/or developing new technology platforms and product candidates across numerous therapeutic areas;
- obtaining regulatory approvals and marketing authorizations for product candidates;
- launching and commercializing any approved products, either directly or with a collaborator or distributor;
- obtaining market acceptance of and acceptable reimbursement for any approved products;
- completing collaborations, licenses and other strategic transactions on favorable terms, if at all;
- maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how; and
- attracting, hiring and retaining qualified personnel.

Even if one or more of our product candidates is eventually approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate and we may not generate significant revenue from sales of such products, resulting in limited or no profitability in the future. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital for the foreseeable future. Any failure to become and remain profitable may adversely affect the market price of our common stock, our ability to raise additional capital and our future viability.

We will need to obtain substantial additional financing to complete the development and any commercialization of our product candidates, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our commercialization efforts, product development or other operations.

Since our inception, we have used substantial amounts of cash to fund our operations and expect our expenses to increase substantially in the foreseeable future. Developing our product candidates and conducting clinical trials for the treatment of cancer and other diseases will require substantial amounts of capital. We will also require a significant additional amount of capital to commercialize any approved products.

As of December 31, 2017, we had cash and cash equivalents of $23.9 million and $133.9 million of marketable securities. We are using and expect to continue to use the net proceeds from our initial public offering, or IPO, and the concurrent private placement to fund expenses in connection with our planned clinical trials, our planned manufacturing facility and processes and the hiring of additional personnel, and for other research and development activities, working capital and general corporate purposes, including our share repurchase program. We believe that such proceeds, together with our existing cash and cash equivalents, will be sufficient to fund our operations for at least the next 12 months. Our estimate as to how long we expect our existing cash and cash equivalents to be available to fund our operations is based on assumptions that may be proved inaccurate, and we could deplete our available capital resources sooner than we currently expect. In addition, 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 any commercialization of our product candidates and may need to raise additional funds sooner than we anticipate if we choose to expand more rapidly than we presently anticipate.

Our future capital requirements may depend on, and could increase significantly as a result of, many factors, including:

- the timing of, and the costs involved in, preclinical and clinical development and obtaining any regulatory approvals for our product candidates;
- the costs of manufacturing, distributing and processing our product candidates;
- the number and characteristics of any other product candidates we develop or acquire;
- our ability to establish and maintain strategic collaborations, licensing or other commercialization arrangements and the terms and timing of such arrangements, including our arrangements with Viracta and Altor;
- the degree and rate of market acceptance of any approved products;
- the emergence, approval, availability, perceived advantages, relative cost, relative safety and relative efficacy of other products or treatments;
- the expenses needed to attract and retain skilled personnel;
- the costs associated with being a public company;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing intellectual property claims, including litigation costs and the outcome of such litigation;
- the costs related to commercializing drug candidates independently;
- the timing, receipt and amount of sales of, or royalties on, any approved products; and
- any product liability or other lawsuits related to our product candidates.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our common stockholders' rights. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or licensing arrangements with pharmaceutical partners, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates, or grant licenses on terms that may not be favorable to us. Additional capital may not be available when we need it, on terms that are

acceptable to us or at all. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market any approved products that we would otherwise prefer to develop and market ourselves , or be unable to continue or expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations and cause the price of our common stock to decline.

We invest our cash on hand in various financial instruments which are subject to risks that could adversely affect our business, results of operations, liquidity and financial condition.

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

We are involved in pending securities litigation and an adverse resolution of such litigation may adversely affect our business, financial condition, results of operations and cash flows.

Following our announcement that we have restated our interim financial statements for the quarters ended June 30, 2015 and September 30, 2015 to address errors related to certain stock-based awards to our Chairman and CEO and build-to-suit lease accounting related to one of our research and development and cGMP facilities, we became the subject of a lawsuit alleging securities law violations. This type of litigation can be expensive and disruptive to normal business operations, and the outcome can be difficult to predict regardless of the facts involved. An unfavorable outcome with respect to this type of lawsuit could have a material adverse effect on our business, financial condition, results of operations or cash flows. For additional information regarding this and other lawsuits in which we are involved, see Part II, Item 1, Legal Proceedings.

Risks Relating to Our Business and Industry

The foundation of our business is based upon the success of our aNK cells as a technology platform. Our aNK platform and product candidates derived thereof, including genetically modified haNK, taNK and t-haNK product candidates, will require significant additional clinical testing before we can potentially seek regulatory approval and launch commercial sales.

Our business and future success depend on our ability to utilize our aNK cells as a technology platform, and to obtain regulatory approval for one or more product candidates derived from it, and then successfully commercialize our product candidates addressing numerous therapeutic areas. Our aNK platform and our haNK, taNK and t-haNK product candidates are in the early stages of development and may never become commercialized. All of our product candidates developed from our technology platform will require additional clinical and non-clinical development, regulatory review and approval in multiple jurisdictions, substantial investment, access to sufficient commercial manufacturing capacity and significant marketing efforts before they can be successfully commercialized. Because all of our product candidates are based on the same core aNK technology, if any of our product candidates encounter safety or efficacy problems, developmental delays or regulatory issues or other problems, these could impact the development plans for our other product candidates.

Utilizing haNK and taNK cells represents a novel approach to immunotherapy, including cancer treatment, and we must overcome significant challenges in order to successfully develop, commercialize and manufacture our product candidates.

We have concentrated our research and development efforts on utilizing aNK cells as an immunotherapy platform and genetically modified aNK cells as product candidates based on this platform. We believe that our product candidates represent a novel approach to immunotherapy, including cancer treatment. Advancing this novel immunotherapy creates significant challenges for us, including:

- educating medical personnel regarding the potential side effect profile of our cells;
- enrolling sufficient numbers of patients in clinical trials;
- developing a reliable, safe and effective means of genetically modifying our cells;
- manufacturing our cells on a large scale and in a cost-effective manner;
- submitting applications for and obtaining regulatory approval, as the FDA and other regulatory authorities have limited experience with commercial development of immunotherapies for cancer; and
- establishing sales and marketing capabilities, as well as developing a manufacturing process and distribution network to support the commercialization of any approved products.

We must be able to overcome these challenges in order for us to successfully develop, commercialize and manufacture our product candidates utilizing haNK and taNK cells.

Even if we successfully develop and commercialize our haNK product candidate for pancreatic cancer, we may not be successful in developing and commercializing our other product candidates, and our commercial opportunities may be limited.

While our most advanced product candidate and program is now haNK in pancreatic cancer, after transitioning our aNK product candidate to haNK for Merkel cell carcinoma, we believe that our future success is highly dependent upon our ability to successfully develop and commercialize our other product candidates as well. We are simultaneously pursuing preclinical and clinical development of a number of product candidates spanning several therapeutic areas, including various types of cancer and infectious and inflammatory diseases. For example, we are devoting substantial resources toward the development of haNK product candidates, which we plan to develop as combination therapies with commercially approved mAbs and late-stage product candidates, and taNK product candidates, which we plan to develop for acute myeloid leukemia, or AML, Non-Hodgkin's lymphoma, or NHL, and solid tumors such as breast, ovarian, lung, head and neck and colorectal cancers. In addition, our ability to realize the full value of our aNK platform will depend on our success in pursuing our other planned product candidates for a wide range of other indications.

Even if we are successful in continuing to build our pipeline of additional product candidates based on our technology platform, obtaining regulatory approvals and commercializing any approved product candidates will require substantial additional funding beyond the net proceeds of our IPO and are prone to numerous risks of failure. Investment in biopharmaceutical product development involves significant risks that any product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile to the satisfaction of regulatory authorities, gain regulatory approval or become commercially viable. We cannot assure you that we will be able to successfully advance any product candidates through the development process. Our research programs may initially show promise in identifying additional product candidates, but ultimately fail to yield additional product candidates for clinical development or commercialization for many reasons, including the following:

- our additional product candidates may not succeed in preclinical or clinical testing due to failing to generate enough data to support the initiation or continuation of clinical trials or due to lack of patient enrollment in clinical trials;
- a product candidate may be shown to have harmful side effects or other characteristics in larger scale clinical studies that indicate it is unlikely to meet applicable regulatory criteria;
- competitors may develop alternatives that render our product candidates obsolete or less attractive;
- we may not be able or willing to assemble sufficient resources to acquire or discover additional product candidates from our technology platform;
- product candidates we develop may nevertheless be covered by third parties' patents or other exclusive rights;
- the market for a product candidate may change during our program so that the continued development of that product candidate is no longer reasonable;
- a product candidate may not be capable of being manufactured in commercial quantities at an acceptable cost, or at all; and
- a product candidate may not be accepted as safe and effective by patients, the medical community or third-party payors.

If any of these events occur, we may be forced to abandon our development efforts for a product candidate or the entire platform, or we may not be able to identify, discover, develop or commercialize additional product candidates, which would have a material adverse effect on our business and could potentially cause us to cease operations.

We may not be able to file 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 in a timely manner, or at all.

Prior to commencing clinical trials in the United States for any of our product candidates, we may be required to have an allowed IND for each product candidate. As of the date of this filing, we have several INDs that have been allowed in the U.S., including 12 for our haNK product candidate as part of our NANT Cancer Vaccine, or NCV, program. We are required to file additional INDs prior to initiating our planned clinical trials. We believe that the

data from previous preclinical studies will support the filing of additional INDs, to enable us to undertake additional clinical studies as we have planned. However, submission of an IND may not result in the FDA allowing further clinical trials to begin and, once begun, issues may arise that will require us to suspend or terminate such clinical trials. Additionally, even if relevant regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND or clinical trial application, these regulatory authorities may change their requirements in the future. The fact that we are pursuing novel technologies may also exacerbate these risks with respect to our product candidates, and as a result we may not meet our anticipated clinical development timelines.

We face significant competition in the biopharmaceutical industry, and many of our competitors have substantially greater experience and resources than we have.

Even if our aNK platform products prove successful, we might not be able to remain competitive because of the rapid pace of technological development in the biopharmaceutical field. Our haNK, taNK and t-haNK product candidates will compete with other cell-based immunotherapy approaches using T- and dendritic cells. We are aware of companies developing product candidates focused on natural killer, or NK, cells. These companies include Bristol-Myers Squibb, Celgene Corporation, and Innate Pharma. Companies that are currently focused on T-cell based treatments include Adaptimmune Limited, Amgen Inc., Bellicum Pharmaceuticals, Inc., Bluebird Bio, Inc., Celgene Corporation, Cellectis SA, GlaxoSmithKline plc, Intrexon Corporation, Juno Therapeutics, Inc., Kite Pharma/Gilead Sciences, Novartis AG, Pfizer Inc. and Ziopharm Oncology, Inc. There is currently one approved dendritic cell-based cancer vaccine, PROVENGE, which is marketed by Valeant Pharmaceuticals for the treatment of metastatic castration resistant prostate cancer. Other companies focused on developing dendritic cell-based product candidates include Argos Therapeutics, Inc., Biovest International, Inc., ImmunoCellular Therapeutics, Ltd., Immune Design, Inc., Inovio Pharmaceuticals, Inc., Intrexon Corporation and Northwest Biotherapeutics, Inc.

Many of our current or potential competitors have greater financial and other resources, larger research and development staffs, and more experienced capabilities in researching, developing and testing products than we do. All of these companies also have more experience in conducting clinical trials, obtaining FDA and other regulatory approvals, and manufacturing, marketing and distributing therapeutic products. Smaller or early-stage companies like us may successfully compete by establishing collaborative relationships with larger pharmaceutical companies or academic institutions. Mergers and acquisitions in the pharmaceutical and biotechnology 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 trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient, or are less expensive than any products that we may develop. Furthermore, currently approved products could be discovered to have application for treatment of cancer and other diseases, which could give such products significant regulatory and market timing advantages over any of our product candidates. In addition, large pharmaceutical companies or other companies with greater resources or experience than us may choose to forgo therapy opportunities that would have otherwise been complementary to our product development and collaboration plans. Our competitors may succeed in developing, obtaining patent protection for, or commercializing their products more rapidly than us, which could result in our competitors establishing a strong market position before we are able to enter the market. A competing company developing or acquiring rights to a more effective therapeutic product for the same diseases targeted by us, or one that offers significantly lower costs of treatment, could render our products noncompetitive or obsolete. We may not be successful in marketing any product candidates we may develop against competitors.

Our business plan involves the creation of a complex integrated ecosystem capable of addressing a wide range of indications. As a result, our future success depends on our ability to prioritize among many different opportunities.

We do not have sufficient resources to pursue development of all or even a substantial portion of the potential opportunities that we believe will be afforded to us by our planned integrated ecosystem. Because we have limited resources and access to capital to fund our operations, our management must make significant prioritization decisions as to which product candidates to pursue and how much of our resources to allocate to each. Our management has broad discretion to suspend, scale down, or discontinue any or all of these development efforts, or to initiate new programs to treat other diseases. If we select and commit resources to opportunities that we are unable to successfully develop, or we forego more promising opportunities, our business, financial condition and results of operations will be adversely affected.

Our planned integrated ecosystem is to be comprised of multiple novel technologies that have never been tested in combination with our product candidates, and we do not know whether our attempts to use them in combination will be effective.

Our business strategy includes using our integrated discovery engine to introduce new product candidates in combination with technologies that were developed by other companies with whom we have entered into strategic collaborations. Each technology and collaboration is unique and has its own risks, and the failure of any individual technology or the combination could materially impair our ability to successfully pursue our own aNK platform and related product candidates.

Our Joint Development and License Agreement with Sorrento Therapeutics, Inc., or Sorrento, expired in December 2017. During our exclusive term, no joint taNK product candidates were identified for development. Although we have been free to independently pursue Her2Neu, CSPG4, CD33, CD123 GD2 and other specified antibodies during the Sorrento exclusive term and are now free to independently pursue all antibodies, we are reliant on third parties for such antibodies on which to base our taNK product candidates. We do not know if we can obtain such antibodies from third parties on commercially reasonable terms and such reliance on third parties may delay our development and increase the associated development costs.

We have also entered into collaborations with affiliates of NantWorks, LLC, or NantWorks, to provide us with access to their database of genomic, transcriptomic and proteomic information collected from a broad array of tumor cell and peripheral blood samples. Our rights to use the database are non-exclusive and are governed by agreements cancelable with 90 days' notice, and we therefore cannot guarantee that we would ultimately have any competitive advantage based on our use of this technology. The database also may not be able to identify novel tumor-associated antigens that are targetable with our technology and the genetic and proteomic analysis capability may not be effective as a companion diagnostic to guide therapeutic treatments.

Although we have agreements with these parties, we cannot control their actions and they may make mistakes, work with our competitors, or not devote sufficient time and attention to us. The arrangements may become cost-prohibitive for us, and their technologies may become obsolete or better options may be available that we are unable to utilize. Using our technology in combination with theirs has never been tried, and we cannot assure you that we will be successful in producing product candidates in connection with these arrangements.

Clinical drug development involves a lengthy and expensive process with an uncertain outcome, results of earlier studies and clinical trials may not be predictive of future clinical trial results, we may not be able to rely on the aNK and haNK phase I clinical trials data for our other product candidates, and our clinical trials may fail to adequately demonstrate substantial evidence of safety and efficacy of our product candidates.

Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. A failure of one or more of our clinical trials 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. There is a high failure rate for drugs proceeding through clinical trials, and product candidates in later stages of clinical trials may fail to show the required safety and efficacy despite having progressed through preclinical studies and initial clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier clinical trials, and we cannot be certain that we will not face similar setbacks. Even if our clinical trials are completed, the results may not be sufficient to support obtaining regulatory approval for our product candidates. In addition, our strategy and anticipated timelines are predicated upon our ability to utilize the phase I clinical trial data for aNK and haNK observed to date to support our planned clinical trials for all of our product candidates, including our haNK and taNK product candidates. To date, we have several INDs for our haNK product candidates, and we cannot offer assurances that the FDA will allow us to utilize the phase I aNK and haNK data to support other planned clinical trials or allow our anticipated INDs for (1) planned phase I or phase Ib/IIa clinical trials for our other product candidates, (2) planned phase IIb/III clinical trials for our haNK and taNK product candidates as potential combination therapies, or (3) any other planned clinical trials, including registration studies.

We have in the past experienced delays in our ongoing clinical trials and we may experience additional delays in the future. We do not know whether future clinical trials, if any, will begin on time, need to be redesigned, enroll an adequate number of patients on time or be completed on schedule, if at all. Clinical trials can be delayed, suspended or terminated by us, regulatory authorities, clinical trial investigators, and ethics committees for a variety of reasons, including failure to:

- generate sufficient preclinical, toxicology, or other in vivo or in vitro data to support the initiation or continuation of clinical trials;
- obtain regulatory approval, or feedback on clinical trial design, to commence a clinical trial;
- identify, recruit and train suitable clinical investigators;
- reach agreement on acceptable terms with prospective CROs and clinical trial sites;
- obtain and maintain institutional review board, or IRB, approval at each clinical trial site;
- identify, recruit and enroll suitable patients to participate in a clinical trial;
- have a sufficient number of patients complete a clinical trial or return for post-treatment follow-up;
- ensure clinical investigators observe clinical trial protocol or continue to participate in a clinical trial;

- address any patient safety concerns that arise during the course of a clinical trial;
- address any conflicts with new or existing laws or regulations;
- add a sufficient number of clinical trial sites;
- timely manufacture sufficient quantities of product candidate for use in clinical trials; or
- raise sufficient capital to fund a clinical trial.

Patient enrollment is a significant factor in the timing of clinical trials and is affected by many factors, including the size and nature of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the clinical trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' or caregivers' perceptions as to the potential advantages of the drug candidate being studied in relation to other available therapies, including any new drugs or treatments that may be approved for the indications we are investigating.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the data safety monitoring board for such clinical trial or by the FDA or any other regulatory authority, or if the IRBs of the institutions in which such clinical trials are being conducted suspend or terminate the participation of their clinical investigators and sites subject to their review. Such authorities may suspend or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements, including Good Clinical Practices, or GCPs, or our clinical protocols, inspection of the clinical trial operations or clinical 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.

If we experience delays in the completion of, or termination of, any clinical trial of our product candidates for any reason, the commercial prospects of our product candidates may be harmed, and our ability to generate product revenues from any of these product candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may significantly harm our business, financial condition and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

We may be unable to obtain regulatory approval for our product candidates. The denial or delay of any such approval would delay commercialization and have a material adverse effect on our potential to generate revenue, our business and our results of operations.

The research, development, testing, manufacturing, labeling, packaging, approval, promotion, advertising, storage, recordkeeping, marketing, distribution, post-approval monitoring and reporting, and export and import of biopharmaceutical products are subject to extensive regulation by the FDA, and by foreign regulatory authorities in other countries. These regulations differ from country to country. To gain approval to market our product candidates, we must provide regulatory authorities with substantial evidence of safety, purity and potency of the product for each indication we seek to commercialize. We have not yet obtained regulatory approval to market any of our product candidates in the United States or any other country. Our business depends upon obtaining these regulatory approvals.

The FDA can delay, limit or deny approval of our product candidates for many reasons, including:

- our inability to satisfactorily demonstrate with substantial clinical evidence that the product candidates are safe, pure and potent for the requested indication;
- the FDA's disagreement with our clinical trial protocol or the interpretation of data from preclinical studies or clinical trials;
- the population studied in the clinical trial not being sufficiently broad or representative to assess safety in the full population for which we seek approval;
- our inability to demonstrate that clinical or other benefits of our product candidates outweigh any safety or other perceived risks;
- the FDA's determination that additional preclinical or clinical trials are required;
    - the FDA's non-approval of the labeling or the specifications of our product candidates;
- the FDA's failure to accept the manufacturing processes or facilities of third-party manufacturers with which we contract; or

- the potential for approval policies or regulations of the FDA to significantly change in a manner rendering our clinical data insufficient for approval.

Even if we eventually successfully complete clinical testing and receive approval of any regulatory filing for our product candidates, the FDA may only grant approval contingent on the performance of costly additional post-approval clinical trials. The FDA may also approve our product candidates for a more limited indication or a narrower patient population than we originally requested, and the FDA may not approve the labeling that we believe is necessary or desirable for the successful commercialization of our product candidates. To the extent we seek regulatory approval in foreign countries, we may face challenges similar to those described above with regulatory authorities in applicable jurisdictions. Any delay in obtaining, or our inability to obtain, applicable regulatory approval for any of our product candidates would delay or prevent commercialization of our product candidates and would materially adversely impact our business, results of operations, financial condition and prospects.

Use of our product candidates could be associated with side effects or adverse events.

As with most biopharmaceutical products, use of our product candidates could be associated with side effects or adverse events which can vary in severity and frequency. Side effects or adverse events associated with the use of our product candidates may be observed at any time, including in clinical trials or once a product is commercialized, and any such side effects or adverse events may negatively affect our ability to obtain regulatory approval or market our product candidates. Side effects such as toxicity or other safety issues associated with the use of our product candidates could require us to perform additional studies or halt development or sale of these product candidates or expose us to product liability lawsuits which will harm our business. We may be required by regulatory agencies to conduct additional preclinical or clinical trials regarding the safety and efficacy of our product candidates which we have not planned or anticipated. We cannot assure you that we will resolve any issues related to any product-related adverse events to the satisfaction of the FDA or any regulatory agency in a timely manner or ever, which could harm our business, prospects and financial condition.

In the phase I clinical trial of aNK conducted by Rush University in 12 patients, one case of transient grade 4 hypoglycemia and several mild-to-moderate fevers were seen in five out of six patients receiving higher doses. In the phase I clinical trial of aNK in 15 patients conducted by the University of Frankfurt, one report of mild fever and a report of sustained back pain were observed. In the phase I clinical trial of aNK in seven patients conducted at the University of Pittsburgh, one report of grade 2 fever, chills and transient hypotension, responsive to supportive care was observed. In the phase I clinical trial of aNK in 12 patients conducted at the Princess Margaret Hospital, four grade 1-2 transient fevers and chills were observed. If we are successful in commercializing our product candidates, the FDA and other foreign regulatory agency regulations will require that we report certain information about adverse medical events if those products may have caused or contributed to those adverse events. The timing of our obligation to report would be triggered by the date we become aware of the adverse event as well as the nature of the event. We may inadvertently fail to report adverse events we become aware of within the prescribed timeframe. We may also fail to appreciate that we have become aware of a reportable adverse event, especially if it is not reported to us as an adverse event or if it is an adverse event that is unexpected or removed in time from the use of our products. If we fail to comply with our reporting obligations, the FDA or other foreign regulatory agencies could take action including criminal prosecution, the imposition of civil monetary penalties, seizure of our products, or delay in approval or clearance of future products.

The clinical and commercial utility of our aNK platform is uncertain and may never be realized.

Our aNK platform is in the early stages of development. To date, aNK cells have only been evaluated in early clinical trials including four published phase I clinical safety trials in approximately 46 patients. These clinical trials were designed to evaluate safety and tolerability, and not designed to produce statistically significant results as to efficacy. Most of the data to date regarding aNK cells were derived from clinical trials not conducted by us, including physician-sponsored clinical trials, and utilizing product not manufactured by us but which we believe is comparable to aNK. haNK cells are presently being evaluated in 12 ongoing company sponsored clinical trials and we are still very early in enrollment. Success in early clinical trials does not ensure that large-scale clinical trials will be successful nor does it predict final results. In addition, we will not be able to treat patients if we cannot manufacture a

sufficient quantity of NK cells that meet our minimum specifications. In addition, our haNK and Her2.taNK product candidates have only been tested in a small number of patients Results from these clinical trials may not necessarily be indicative of the safety and tolerability or efficacy of our products as we expand into larger clinical trials.

We may not ultimately be able to provide the FDA with substantial clinical evidence to support a claim of safety, purity and potency sufficient to enable the FDA to approve aNK platform product candidates for any indication. This may be because later clinical trials fail to reproduce favorable data obtained in earlier clinical trials, because the FDA disagrees with how we interpret the data from these clinical trials, or because the FDA does not accept these therapeutic effects as valid endpoints in pivotal clinical trials necessary for market approval. We will also need to demonstrate that aNK platform product candidates are safe. We do not have data on possible harmful long-term effects of aNK platform product candidates and do not expect to have this data in the near future. As a result, our ability to generate clinical safety and effectiveness data sufficient to support submission of a marketing application or commercialization of our aNK platform therapy is uncertain and is subject to significant risk.

We have limited experience as a company conducting clinical trials and have relied on third parties to conduct many of our preclinical studies and clinical trials. Any failure by a third party or by us to conduct the clinical trials according to Good Clinical Practices and in a timely manner may delay or prevent our ability to seek or obtain regulatory approval for or commercialize our product candidates.

To date, the only company sponsored studies have been in Merkel cell carcinoma, pancreatic cancer and haNK in advanced solid tumor. All four completed phase I clinical trials with aNK have been investigator-initiated studies sponsored by the investigator's institution. Ten additional INDs for new phase Ib/II clinical trials in various indications are newly opened, but not yet recruiting. This relative lack of experience may contribute to our planned clinical trials not beginning or completing on time, if at all. Large-scale clinical trials will require significant additional resources and reliance on contract research organizations, or CROs, clinical investigators, or consultants. Consequently, our reliance on outside parties may introduce delays beyond our control. Our CROs and other third parties must communicate and coordinate with one another in order for our trials to be successful. Additionally, our CROs and other third parties may also have relationships with other commercial entities, some of which may compete with us. If our CROs or other third parties conducting our clinical trials do not perform their contractual duties or regulatory obligations, experience work stoppages, do not meet expected deadlines, terminate their agreements with us or 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 trial protocols, GCPs, or other regulatory requirements or for any other reason, we may need to conduct additional clinical trials or enter into new arrangements with alternative CROs, clinical investigators or other third parties. We may be unable to enter into arrangements with alternative CROs on commercially reasonable terms, or at all.

We and the third parties upon which we rely are required to comply with GCPs. GCPs are regulations and guidelines enforced by regulatory authorities around the world, through periodic inspections, for products in clinical development. If we or these third parties fail to comply with applicable GCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and have to be repeated, and our submission of marketing applications may be delayed or the regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We are subject to the risk that, upon inspection, a regulatory authority will determine that any of our clinical trials fail to comply or failed to comply with applicable GCP regulations. In addition, our clinical trials must be conducted with material produced under GMP and Good Tissue Practice, or GTP, regulations, which are enforced by regulatory authorities. In addition, our clinical trials must be conducted with material produced under GMP regulations, which are enforced by regulatory authorities. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process. Moreover, our business may be significantly impacted if our CROs, clinical investigators or other third parties violate federal or state healthcare fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

We also anticipate that part of our strategy for pursuing the wide range of indications potentially addressed by our aNK, haNK, taNK and t-haNK platforms will involve further investigator-initiated clinical trials. While these trials generally provide us with valuable clinical data that can inform our future development strategy in a cost-efficient manner, we generally have less control over not only the conduct but also the design of these clinical trials. Third-party investigators may design clinical trials involving our product candidates with clinical endpoints that are more difficult to achieve or in other ways that increase the risk of negative clinical trial results compared to clinical trials we may design on our own. Negative results in investigator-initiated clinical trials, regardless of how the clinical trial was designed or conducted, could have a material adverse effect on our prospects and the perception of our product candidates.

Moreover, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. In addition, some of our trials are being run by an entity controlled by our employees. Under certain circumstances, the Company may be required to report some of these relationships to the FDA. The FDA may conclude that a financial relationship between the company and a principal investigator has created a conflict of interest or otherwise affected interpretation of the study. The FDA may

therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA and may ultimately lead to the denial of regulatory approval of one or more of our product candidates.

We have not initiated any development of our taNK product candidates through our collaboration with Sorrento, which expired in December 2017. Accordingly, we will not receive any benefits as a result of this collaboration.

Our Joint Development and License Agreement with Sorrento Therapeutics, Inc., or Sorrento, expired in December 2017. During our exclusive term, no joint taNK product candidates were identified for development. Although we have been free to independently pursue Her2Neu, CSPG4, CD33, CD123 GD2 and other specified antibodies during the Sorrento exclusive term and are now free to independently pursue all antibodies, we are reliant on third parties for such antibodies on which to base our taNK product candidates. We do not know if we can obtain such antibodies from third parties on commercially reasonable terms and such reliance on third parties may delay our development and increase the associated development costs.

We are heavily dependent on our senior management, particularly Drs. Patrick Soon-Shiong and Barry Simon, and a loss of a member of our senior management team in the future could harm our business.

If we lose members of our senior management, we may not be able to find appropriate replacements on a timely basis, and our business could be adversely affected. Our existing operations and continued future development depend to a significant extent upon the performance and active participation of certain key individuals, including Drs. Patrick Soon-Shiong, our Chairman and CEO and our principal stockholder, and Barry Simon, our President and Chief Administrative Officer. Although Dr. Soon-Shiong will primarily focus on NantKwest matters and is highly active in our management, he does devote a certain amount of his time to a number of different endeavors and companies, including NantWorks, a collection of multiple companies in the healthcare and technology space, which he founded in 2011. The risks related to our dependence upon Dr. Soon-Shiong are particularly acute given his ownership percentage, the commercial and other relationships that we have with entities affiliated with him, role in our company and reputation. If we were to lose Drs. Soon-Shiong or Simon, we may not be able to find appropriate replacements on a timely basis and our financial condition and results of operations could be materially adversely affected.

Competition for qualified personnel in the biotechnology and pharmaceuticals industry is intense due to the limited number of individuals who possess the skills and experience required. To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have provided stock options and warrants that vest over time. Additionally, we provided warrants that vest upon the achievement of certain performance milestones to Dr. Soon-Shiong. The value to employees of stock options and warrants 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. We face significant competition for employees, particularly scientific personnel, from other biopharmaceutical companies, which include both publicly-traded and privately-held companies, and we may not be able to hire new employees quickly enough to meet our needs. 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. Except with respect to Dr. Simon, we do not maintain “key man” insurance policies on the lives of these individuals or the lives of any of our other employees. We may not be able to attract and retain quality personnel on acceptable terms, or at all, which may cause our business and operating results to suffer.

Dr. Soon-Shiong, our Chairman and CEO and our principal stockholder, has significant interests in other companies which may conflict with our interests.

Our Chairman and CEO, Dr. Soon-Shiong, is the founder of NantWorks. The various NantWorks companies are currently exploring opportunities in the immunotherapy, infectious disease and inflammatory disease fields. In particular, we have agreements with NantOmics, LLC (“NantOmics”), NanoCav, LLC (“NanoCav”), NantCell, Inc. (“NantCell”), NantBio, Inc. (“NantBio”), VivaBioCell S.p.A. (“VivaBioCell”), and Altor BioScience Corporation (“Altor”) to provide services, technology and equipment for use in our efforts to develop our product pipeline. Dr. Soon-Shiong holds a controlling interest in these entities. As a result, they or other companies affiliated with Dr. Soon-Shiong may compete with us for business opportunities or, in the future, develop products that are competitive with ours (including products in the other therapeutic fields in which we may target in the future). In addition, we may enter into an agreement relating to an IL-15 superagonist product developed by an affiliate and we are also pursuing supply arrangements for various investigational agents controlled by affiliates to be used in our clinical trials. If Dr. Soon-Shiong was to cease his affiliation with us or with NantWorks, these entities may be unwilling to continue these relationships with us on commercially reasonable terms, or at all, and as a result may impede our ability to control the supply chain for our combination therapies. These collaboration agreements do not typically specify how sales will be apportioned between the parties upon successful commercialization of the product. As a result, we cannot guarantee that we will receive a percentage of the revenue that is at least proportional to the costs that we will incur in commercializing the product candidate.

In addition, in April 2017, we entered into a sublease agreement with Tensorcom, Inc., or Tensorcom, related to our San Diego, California, research and development laboratory and office space, with an initial lease from May 1, 2017 through April 30, 2018. In January 2018, we entered into another sublease agreement with NantBio, Inc., or NantBio, related to our San Diego, California, facility. This agreement for space and services was effective as of December 1, 2017 for a term of 24 months. Our Chairman and CEO indirectly owns all of the outstanding equity of Tensorcom and a controlling interest in NantBio. As a result Dr. Soon-Shiong's interests may not be aligned with our other stockholders and he may from time to time be incentivized to take certain actions that benefit his other interests and that our other stockholders do not view as being in their interest as investors in our company. Moreover, even if they do not directly relate to us, actions taken by Dr. Soon-Shiong and the companies with which he is involved could impact us. Given we changed our corporate name to NantKwest during 2015, this is particularly true of the various NantWorks companies.

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

To effect our business plan, we will need to rapidly add other management, accounting, regulatory, manufacturing and scientific staff. As of December 31, 2017, we had 139 employees. We will need to attract, retain and motivate a significant number of new additional managerial, operational, sales, marketing, financial, and other personnel, as well as highly skilled scientific and medical personnel, and to expand our capabilities to successfully pursue our research, development, manufacturing and commercialization efforts and secure collaborations to market and distribute our products. This growth may strain our existing managerial, operational, financial and other resources. We also intend to add personnel in our research and development and manufacturing departments as we expand our clinical trial and research capabilities. Moreover, we will need to hire additional accounting and other personnel and augment our infrastructure as a result of operating as a public company. Any inability to attract and retain qualified employees to enable our planned growth and establish additional capabilities or our failure to manage our growth effectively could delay or curtail our product development and commercialization efforts and harm our business.

We have limited manufacturing experience and may not be able to manufacture haNK or taNK cells on a large scale or in a cost-effective manner.

haNK and Her2.taNK cells have been grown in various quantities in closed cell culture systems and small scale bioreactors. With all manufacturing efforts being conducted in-house, we will need to develop the ability to grow haNK and taNK cells on a large scale basis in a cost efficient manner. While we have made great strides with our haNK production, including a validated cryopreserved form of the product, we have not demonstrated the ability to manufacture these cells beyond quantities sufficient for our clinical programs. We have not demonstrated the ability to manufacture our taNK cells beyond quantities sufficient for research and development and limited clinical activities. Additionally, we have no experience manufacturing our NK cells specifically at the capacity that will be necessary to support commercial sales. The novel nature of our technology also increases the complexity and risk in the manufacturing process. We have opened our Culver City, California, site for the manufacture of cryopreserved haNK cells for our planned clinical trials and plan to open our larger El Segundo, California, site in 2018 for the manufacture of all of our haNK and taNK cells for our clinical trials and, if we receive FDA approval, initial commercialization. However, we may encounter difficulties in obtaining the approvals for, and designing, constructing, validating and operating, any new manufacturing facility. We may also be unable to hire the qualified personnel that we will require to accommodate the expansion of our operations and manufacturing capabilities. If we relocate our manufacturing activities to a new facility during or after a pivotal clinical trial, we may be unable to obtain regulatory approval unless and until we demonstrate to the FDA’s satisfaction the similarity of our haNK and taNK cells manufactured in the new facility to our cells manufactured in prior facilities. If we cannot adequately demonstrate similarity to the FDA, we could be required to repeat clinical trials, which would be expensive, and would substantially delay regulatory approval.

Because our product candidates are cell-based, their manufacture is complicated. In addition, we rely on certain third party suppliers for manufacturing supplies such as X-VIVO 10 media to grow and produce our cells. Reliance on such third-party suppliers exposes us to supply interruptions and shortages that could have an adverse effect on our ability to produce product. Moreover, our present production process may not meet our initial expectations as to reproducibility, yield, purity or other measurements of performance. Any supply interruption from third parties and entities that are affiliated with Patrick Soon-Shiong and/or NantWorks could materially harm our ability to manufacture our product candidates until a new source of supply, if any, could be identified and qualified. We may be unable to find a sufficient alternative supply channel in a reasonable time or on commercially reasonable terms. In addition, we may have to customize a bioreactor system to our manufacturing process. Because our manufacturing process is unproven, we may never successfully commercialize our products. In addition, because the clinical trials were conducted using a system that will not be sufficient for commercial quantities, we may have to show comparability of the different versions of systems we have used. For these and other reasons, we may not be able to manufacture haNK and taNK cells on a large scale or in a cost-effective manner.

aNK platform cells have been produced at academic institutions associated with our other clinical trial sites. In the past, the lack of production of aNK platform cells has caused delays in the commencement of our clinical trials.. We have been establishing NK cell production capacity to meet anticipated demand for our planned clinical trials but may not be able to successfully build out our capacity to meet our current and anticipated future needs. Any damage to or destruction of our facility and equipment, prolonged power outage, contamination or shut down by the FDA or other regulatory authority could significantly impair or curtail our ability to produce haNK and taNK cells.

We are dependent on third parties to store our aNK, haNK, taNK or t-haNK cells, and any damage or loss to our master cell bank would cause delays in replacement, and our business could suffer.

The aNK cells of our master and working cell banks are stored in freezers at a third party biorepository (BioReliance) and also stored in our freezers at our production facility. If these cells are damaged at both facilities, including by the loss or malfunction of these freezers or our back-up power systems, as well as by damage from fire, power loss or other natural disasters, we would need to establish replacement master and working cell banks, which would impact clinical supply and delay our patients' treatments. If we are unable to establish replacement cell banks, we could incur significant additional expenses and liability to patients whose treatment is delayed, and our business could suffer.

If we or any of our third party manufacturers that we may use do not maintain high standards of manufacturing, our ability to develop and commercialize haNK, taNK or t-haNK cells could be delayed or curtailed.

We and any third parties that we may use in the future to manufacture our products must continuously adhere to cGMP regulations rigorously enforced by the FDA through its facilities inspection program. If our facilities or the facilities of third parties who we may use in the future to produce our products do not pass a pre-approval inspection, the FDA will not grant market approval for haNK, taNK or t-haNK cells. In complying with cGMP, we and any third-party manufacturers must expend significant time, money and effort in production, record-keeping and quality control to assure that each component of our haNK, taNK or t-haNK cell therapies meets applicable specifications and other requirements. We or any of these third-party manufacturers may also be subject to comparable or more stringent regulations of foreign regulatory authorities. If we or any of our third-party manufacturers fail to comply with these requirements, we may be subject to regulatory action, which could delay or curtail our ability to develop, obtain regulatory approval of, and commercialize haNK, taNK or t-haNK cells. If our component part manufacturers and suppliers fail to provide components of sufficient quality, and that meet our required specifications, our clinical trials or commercialization of haNK, taNK or t-haNK cells could be delayed or halted, and we could face product liability claims.

If we or our third-party manufacturers that we may engage 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, by us and any third-party manufacturers that we may use in the future. We and our manufacturers 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 our procedures for using, storing and disposing of these materials comply with legally prescribed standards, we 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.

We have not yet developed a validated methodology for freezing and thawing large quantities of taNK cells, which we believe will be required for the storage and distribution of our taNK product candidates.

We have not demonstrated that taNK cells can be frozen and thawed in large quantities without damage, in a cost-efficient manner and without degradation over time. We may encounter difficulties not only in developing freezing and thawing methodologies, but also in obtaining the necessary regulatory approvals for using such methodologies in treatment. If we cannot adequately demonstrate similarity of our frozen product to the unfrozen form to the satisfaction of the FDA, we could face substantial delays in our regulatory approvals. If we are unable to freeze

taNK cells for shipping purposes, our ability to promote adoption and standardization of our products, as well as achieve economies of scale by centralizing our production facility, will be limited. Even if we are able to successfully freeze and thaw taNK cells in large quantities, we will still need to develop a cost-effective and reliable distribution and logistics network, which we may be unable to accomplish. For these and other reasons, we may not be able to commercialize haNK or taNK cells on a large scale or in a cost-effective manner.

We will rely on third party healthcare professionals to administer haNK or taNK cells to patients, and our business could be harmed if these third parties administer these cells incorrectly.

We will rely on the expertise of physicians, nurses and other associated medical personnel to administer haNK or taNK cells to clinical trial patients. If these medical personnel are not properly trained to administer, or do not properly administer, haNK or taNK cells, the therapeutic effect of haNK or taNK cells may be diminished or the patient may suffer injury.

In addition, if we achieve the ability to freeze and thaw our taNK cells, third-party medical personnel will have to be trained on proper methodology for thawing haNK or taNK cells received from us. If this thawing is not performed correctly, the cells may become damaged and/or the patient may suffer injury. While we intend to provide training materials and other resources to these third-party medical personnel, the thawing of haNK or taNK cells will occur outside our supervision and may not be administered properly. If, due to a third-party error, people believe that haNK or taNK cells are ineffective or harmful, the desire to use haNK or taNK cells may decline, which would negatively impact our business, reputation and prospects. We may also face significant liability even though we may not be responsible for the actions of these third parties.

Even if any of our product candidates receive regulatory approvals, they may fail to achieve the broad degree of market acceptance and use necessary for commercial success.

Any potential future commercial success of any of our product candidates will depend, among other things, on its acceptance by physicians, patients, healthcare payors, and other members of the medical community as a therapeutic and cost-effective alternative to commercially available products. Because only a few cell-based therapy products have been commercialized, we do not know to what extent cell-based immunotherapy products will be accepted as therapeutic alternatives. If we fail to gain market acceptance, we may not be able to earn sufficient revenues to continue our business. Market acceptance of, and demand for, any product that we may develop, if approved for commercial sale, will depend on many factors, including:

- our ability to provide substantial evidence of safety and efficacy;
- convenience and ease of administration;
- prevalence and severity of adverse side effects;
- availability of alternative and competing treatments;
- cost effectiveness;
- the ability to offer appropriate patient access programs, such as co-pay assistance;
- the extent to which physicians recommend our products to their patients;
- effectiveness of our marketing and distribution strategy and pricing of any product that we may develop;
- publicity concerning our products or competitive products; and
- our ability to obtain sufficient third-party coverage and adequate reimbursement.

If haNK and taNK cells are approved for use but fail to achieve the broad degree of market acceptance necessary for commercial success, our operating results and financial condition will be adversely affected. In addition, even if haNK and taNK cells gain acceptance, the markets for treatment of patients with our target indications may not be as significant as we estimate.

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

The regulations that govern marketing approvals, pricing and reimbursement for new drugs vary widely from country to country. In the United States, recently enacted legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay the commercial launch of the product and negatively impact the revenue we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if any product candidates we may develop obtain marketing approval.

Our ability to successfully commercialize any products that we may develop also will depend in part on the extent to which reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. Government authorities also impose mandatory discounts for certain patient groups and may seek to increase such discounts at any time. Future regulation may negatively impact the price of our products, if approved. It may be difficult to promptly obtain coverage and profitable payment rates from both the government-funded and private payors for any of our approved product candidates, and this may have a material adverse effect on our operating results, our ability to raise capital and our overall financial condition.

There are risks inherent in our business that may subject us to potential product liability suits and other claims, which may require us to engage in expensive and time-consuming litigation or pay substantial damages and may harm our reputation and reduce the demand for our product.

Our business exposes us to product liability risks, which are inherent in the testing, manufacturing, marketing and sale of biopharmaceutical products. We will face an even greater risk of product liability if we commercialize haNK, taNK and t-haNK cells. For example, we may be sued if any product we develop allegedly causes or is perceived to cause injury or is found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability and a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products. Even a successful defense would require significant financial and management resources.

Certain aspects of how haNK, taNK and t-haNK cells are processed and administered may increase our exposure to liability. Medical personnel administer haNK, taNK and t-haNK cells to patients intravenously in an outpatient procedure. This procedure poses risks to the patient similar to those occurring with infusions of other cell products, such as T-cells and stem cells, including blood clots, infection and mild to severe allergic reactions. Additionally, haNK, taNK and t-haNK cells or components of our haNK, taNK and t-haNK cell therapy may cause unforeseen harmful side effects. For example, a patient receiving haNK, taNK and t-haNK cells could have a severe allergic reaction or could develop an autoimmune condition to materials infused with the haNK, taNK t-haNK cells.

In addition, we have not conducted studies on the long-term effects associated with the media that we use to grow our haNK, taNK and t-haNK cells. Similarly, we expect to use media in freezing our haNK, taNK and t-haNK cells for shipment. These media could contain substances that have proved harmful if used in certain quantities. As we continue to develop our haNK, taNK and t-haNK cell therapy, we may encounter harmful side effects that we did not previously observe in our prior studies and clinical trials. Additionally, the discovery of unforeseen side effects of haNK, taNK and t-haNK cells could also lead to lawsuits against us.

Regardless of merit or eventual outcome, product liability or other claims may, among other things, result in:

- decreased demand for any approved products;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants or cancellation of clinical trials;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to clinical trial participants or patients;

- regulatory investigations, product recalls, withdrawals or labeling, marketing or promotional restrictions;
- exhaustion of any available insurance and our capital resources;
- loss of revenue;
- a potential decrease in our share price; and
- the inability to commercialize any products we develop.

Our inability to obtain and maintain sufficient product liability insurance at an acceptable cost and scope of coverage to protect against potential product liability claims could prevent or inhibit the commercialization of our products. We obtained product liability insurance covering our clinical trials with policy limits that we believe are customary for similarly situated companies and adequate to provide us with coverage for foreseeable risks. Although we maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. If we determine that it is prudent to increase our product liability coverage due to the commercial launch of any approved product, we may be unable to obtain such increased coverage on acceptable terms, or at all. Our insurance policies also have various exclusions and deductibles, and we may be subject to a product liability claim for which we have no coverage. We will have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Moreover, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses. If and when we obtain approval for marketing our product candidates, we intend to expand our insurance coverage to include the sale of the applicable products; however, we may be unable to obtain this liability insurance on commercially reasonable terms. If a successful product liability or other claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover these claims and our business operations could suffer.

We currently have no marketing and sales organization and have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, we may not be able to generate product revenue.

We currently have no sales, marketing or distribution capabilities and have no experience as a company in marketing products. If we develop internal sales, marketing and distribution organization, this would require significant capital expenditures, management resources and time, and we would have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel.

If we are unable or decide not to establish internal sales, marketing and distribution capabilities, we expect to pursue collaborative arrangements regarding the sales, marketing and distribution of our products. However, we may not be able to establish or maintain such collaborative arrangements, or if we are able to do so, their sales forces may not be successful in marketing our products. Any revenue we receive would depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the sales, marketing and distribution efforts of such third parties and our revenue from product sales may be lower than if we had commercialized our product candidates ourselves. We also face competition in our search for third parties to assist us with the sales, marketing and distribution efforts of our product candidates. There can be no assurance that we will be able to develop internal sales, marketing distribution capabilities or establish or maintain relationships with third-party collaborators to commercialize any product in the United States or overseas.

A variety of risks associated with marketing our product candidates internationally could materially adversely affect our business.

We plan to seek regulatory approval of our product candidates outside of the United States and, accordingly, we expect that we will be subject to additional risks related to operating in foreign countries if we obtain the necessary approvals, including:

- differing regulatory requirements in foreign countries;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- 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;
- 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 international operations may materially adversely affect our ability to attain or maintain profitable operations.

We have formed, and may in the future 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 have formed, and may in the future 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. For example, we entered into an agreement whereby Viracta granted to us exclusive world-wide rights to Viracta's phase II drug candidate, VRx-3996, for use in combination with our platform of natural killer cell therapies. However, if Viracta fails to raise sufficient capital to complete their pivotal phase II trial, if their trial is unsuccessful, or if our future clinical trial of NK cell therapy in combination with VRx-3996 fails, the value of the Viracta license would be materially adversely affected.

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. 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. We cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction. 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.

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

Our business model involves the storage and transmission of clinical trial and other data on our systems and on the systems of our consultants and contractors, and security breaches expose us to a risk of loss of this information, governmental fines and penalties, litigation and/or potential liability, in addition to negative publicity. Despite the implementation of security measures, our internal computer systems and those of our contractors and consultants are vulnerable to damage from computer viruses and unauthorized access. Our security measures and those of our contractors and consultants may also be breached due to employee error, malfeasance or otherwise. 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, ongoing or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on affiliated entities and third parties for research and development of our product candidates and to conduct clinical trials and may rely on third parties for the manufacture of our product candidates and similar events relating to their computer systems could also have a material adverse effect on our business.

We expect that these risks and exposures related to our internal computer systems will remain high for the foreseeable future due to the rapidly evolving nature and sophistication of cyber threats to our internal computer systems. There can be no assurance that our efforts to implement adequate security measures will remain sufficient to protect the

Company against future cyber attacks. 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, suffer damage to our reputation, the further development and commercialization of our product candidates could be delayed and our stock price could decline.

Future acquisitions and investments could disrupt our business and harm our financial condition and operating results.

Our success may depend, in part, on our ability to expand our products and services. In some circumstances, we may determine to do so through the acquisition of complementary businesses and technologies rather than through, or in conjunction with, internal development. The identification of suitable acquisition candidates can be difficult, time-consuming and costly, and we may not be able to successfully complete identified acquisitions. The risks we face in connection with acquisitions include:

- diversion of management time and focus from operating our business to addressing acquisition integration challenges;
- retention of key employees from the acquired company;

- coordination of research and development functions;
- integration of the acquired company's accounting, management information, human resources and other administrative systems;
- liability for activities of the acquired company before the acquisition, including intellectual property infringement claims, employee disputes, and alleged violations of laws; and
- unanticipated write-offs or charges.

Our failure to address these risks or other problems encountered in connection with our past or future acquisitions and investments could cause us to fail to realize the anticipated benefits of these acquisitions or investments, cause us to incur unanticipated liabilities, and harm our business generally. Future acquisitions could also result in dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, amortization expenses, incremental operating expenses or the write-off of goodwill, any of which could harm our financial condition or operating results.

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

Our operations, and those of our contractors and consultants, could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics, acts of terrorism, acts of war 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. We may rely on third-party manufacturers to produce and process our product candidates. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption. Our corporate headquarters are in California near major earthquake faults and fire zones. Our operations and financial condition could suffer in the event of a major earthquake, fire or other natural disaster.

Our employees, affiliates, independent contractors, clinical investigators, CROs, data safety and monitoring boards, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, and insider trading.

We are exposed to the risk of employee fraud, misconduct or other illegal activity by our employees, affiliates, independent contractors, clinical investigators, CROs, data safety and monitoring boards, 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, privacy and security and other laws in the United States and similar foreign fraudulent misconduct laws;
- comply with federal securities laws regulating insider trading; or
- report financial information or data accurately or to disclose unauthorized activities to us.

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 include the collection and/or use of information obtained in the course of patient recruitment for clinical trials. The healthcare laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, knowingly and willfully soliciting, receiving, offering or providing any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual, or the purchase, lease, order or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, including the civil False Claims Act, which impose criminal and civil penalties against individuals or entities for, among other things, knowingly presenting, or causing to be presented, claims for payment or approval from the federal government including Medicare and Medicaid, 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 additional federal criminal statutes that prohibit, among other actions, 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, regardless of the payor (e.g., public or private), and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose requirements, including mandatory contractual terms, 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;
- the federal Physician Payments 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 ACA, 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, or HHS, 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 by the 90th day of each subsequent calendar year, and disclosure of such information will be made by HHS on a publicly available website; and
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers.

Additionally, we are subject to state and foreign laws and regulations that are analogous to the healthcare laws and regulations described above, among others, some of which may be broader in scope and may apply regardless of the payor. Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and relevant compliance guidance promulgated by the federal government; some state laws require drug manufacturers to report information related to payments and other transfers of value to physicians and

other healthcare providers or marketing expenditures; and some state and foreign laws govern the privacy and security of health information in ways that differ, and in certain cases are more stringent than, 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, 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 do 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/or 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, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations. Defending against any such actions can be costly, time-consuming, and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired.

Competing generic medicinal products or biosimilars may be approved.

In the E.U., there exists a process for approval of generic biological medicinal products once patent protection and other forms of data and market exclusivity have expired. Arrangements for approval of biosimilar products exist in the United States, as well. Other jurisdictions are considering adopting legislation that would allow the approval of generic biological medicinal products. If generic medicinal products are approved, competition from such products may substantially reduce sales of our products.

Public opinion and scrutiny of cell-based immunotherapy approaches may impact public perception of our company and product candidates, or may adversely affect our ability to conduct our business and our business plans.

Our platform utilizes a relatively novel technology involving the genetic modification of human cells and utilization of those modified cells in other individuals, and no NK cell-based immunotherapy has been approved to date. Public perception may be influenced by claims, such as claims that cell-based immunotherapy is unsafe, unethical, or immoral and, consequently, our approach may not gain the acceptance of the public or the medical community. Negative public reaction to cell-based immunotherapy in general could result in greater government regulation and stricter labeling requirements of cell-based immunotherapy products, including any of our product candidates, and could cause a decrease in the demand for any products we may develop. Adverse public attitudes may adversely impact our ability to enroll clinical trials. Moreover, our success will depend upon physicians specializing in the treatment of those diseases that our product candidates target prescribing, and their patients being willing to receive, treatments that involve the use of our product candidates in lieu of, or in addition to, existing treatments they are already familiar with and for which greater clinical data may be available. More restrictive government regulations or negative public opinion could have an adverse effect on our business or financial condition and may delay or impair the development and commercialization of our product candidates or demand for any products we may develop. Adverse events in our clinical trials, even if not ultimately attributable to our product candidates, and the resulting publicity could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of our potential product candidates, stricter labeling requirements for those product candidates that are approved and a decrease in demand for any such product candidates.

Our business may be materially affected by changes to fiscal and tax policies. Negative or unexpected tax consequences could adversely affect our results of operations.

The Tax Cuts and Jobs Act of 2017 was approved by Congress on December 20, 2017. This legislation will make significant changes to the U.S. Internal Revenue Code. Such changes include a reduction in the corporate tax rate and limitations on certain corporate deductions and credits, among other changes. Certain of these changes could have a

negative impact on our business. In addition, adverse changes in financial outlook of our operations or changes in tax law could lead to changes in our valuation allowances against deferred tax assets on our consolidated balance sheets, which could materially affect our results of operations.

Risks Relating to Government Regulation

We may fail to obtain or may experience delays in obtaining regulatory approval to market our aNK platform product candidates, which will significantly harm our business.

We do not have the necessary approval to market or sell aNK platform products in the United States or any foreign market. Before marketing aNK platform product candidates, we must successfully complete extensive preclinical studies and clinical trials and rigorous regulatory approval procedures. We cannot offer assurances that we will apply for or obtain the necessary regulatory approval to commercialize aNK platform product candidates in a timely manner, or at all.

Conducting clinical trials is uncertain and expensive and often takes many years to complete. The results from preclinical testing and early clinical trials are often not predictive of results obtained in later clinical trials. In conducting clinical trials, we may fail to establish the effectiveness of haNK, taNK and haNK cells for the targeted indication or we may discover unforeseen side effects. Moreover, clinical trials may require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit. Clinical trials are also often subject to unanticipated delays. In addition, haNK, taNK and t-haNK cells are produced in small scale cell culture systems and we may be unable to adapt the production method to large scale production systems. Also, patients participating in the trials may die before completion of the clinical trial or suffer adverse medical effects unrelated to treatment with haNK, taNK and t-haNK cells. This could delay or lead to termination of our clinical trials. A number of companies in the biotechnology industry have suffered significant setbacks in every stage of clinical trials, even in advanced clinical trials after positive results in earlier clinical trials.

To date, the FDA has approved only a few cell-based therapies for commercialization. The processes and requirements imposed by the FDA may cause delays and additional costs in obtaining regulatory approvals for our product candidates. Because our aNK platform product is novel, and cell-based therapies are relatively new, regulatory agencies may lack experience in evaluating product candidates like our aNK platform products. This inexperience may lengthen the regulatory review process, increase our development costs and delay or prevent commercialization of our aNK platform products. In addition, the following factors may impede or delay our ability to obtain timely regulatory approvals, if at all:

- our limited experience in filing and pursuing Biologics License Applications, or BLAs, necessary to gain regulatory approvals related to genetically modified cancer cell line therapies;
- any failure to develop substantial evidence of clinical efficacy and safety, and to develop quality standards;
- a decision by us or regulators to suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks;
- regulatory inspections of our clinical trials, clinical trial sites or manufacturing facilities, which may, among other things, require us to undertake corrective action or suspend or terminate our clinical trials if investigators find us not to be in compliance with applicable regulatory requirements;
- our ability to produce sufficient quantities of haNK or taNK cells to complete our clinical trials;
- varying interpretations of the data generated from our clinical trials; and
- changes in governmental regulations or administrative action.

Any delays in, or termination of, our clinical trials could materially and adversely affect our development and collaboration timelines, which may cause our stock price to decline. If we do not complete clinical trials for haNK, taNK and t-haNK cells and seek and obtain regulatory approvals, we may not be able to recover any of the substantial costs we have invested in the development of haNK, taNK and t-haNK cells.

Even if we obtain regulatory approvals for aNK related platform products, those approvals and ongoing regulation of our products may limit how we manufacture and market our products, which could prevent us from realizing the full benefit of our efforts.

If we obtain regulatory approvals, our aNK platform products, and our manufacturing facilities will be subject to continual regulatory review, including periodic unannounced inspections, by the FDA and other United States and foreign regulatory authorities. In addition, regulatory authorities may impose significant restrictions on the indicated uses or impose ongoing requirements for potentially costly post-approval studies. aNK platform product candidates would also be subject to ongoing FDA requirements governing the labeling, packaging, storage, advertising, promotion, recordkeeping and submission of safety and other post-market information. These and other factors may significantly restrict our ability to successfully commercialize haNK and taNK cell therapies.

Manufacturers of biopharmaceutical products and their facilities, vendors and suppliers are subject to continual review and periodic unannounced inspections by the FDA and other regulatory authorities for compliance with cGMP regulations, which include requirements relating to quality control and quality assurance as well as to the

corresponding maintenance of records and documentation. Furthermore, our manufacturing facilities must be approved by regulatory agencies before these facilities can be used to manufacture aNK platform products, and they will also be subject to additional regulatory inspections. Any material changes we may make to our manufacturing process or to the components used in our products may require additional prior approval by the FDA and state or foreign regulatory authorities. Failure to comply with FDA or other applicable regulatory requirements may result in criminal prosecution, civil penalties, recall or seizure of products, partial or total suspension of production or withdrawal of a product from the market.

We must also report adverse events that occur when our products are used. The discovery of previously unknown problems with aNK, haNK, taNK and t-haNK cells and therapies or our manufacturing facilities may result in restrictions or sanctions on our products or manufacturing facilities, including withdrawal of our products from the market or suspension of manufacturing. Regulatory agencies may also require us to reformulate our products, conduct additional clinical trials, make changes in the labeling of our product or obtain re-approvals. This may cause our reputation in the market place to suffer or subject us to lawsuits, including class action suits.

In addition, if we, our product candidates or the manufacturing facilities for our product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

- issue warning letters that can produce adverse publicity;
- impose civil or criminal penalties;
- suspend regulatory approval;
- suspend any ongoing clinical trials;
- refuse to approve pending applications or supplements to applications filed by us;
- impose restrictions on operations, including costly new manufacturing requirements;
- seize or detain products or request us to initiate a product recall; or
- pursue and obtain an injunction.

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 product, manufacturing, and in many cases reimbursement 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 some cases, the price that we intend to charge for our products is also subject to approval by regulatory authorities.

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.

We may seek orphan drug status or breakthrough therapy designation for one or more of our product candidates, but even if either is granted, we may be unable to maintain any benefits associated with breakthrough therapy designation or 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 drug or 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. In 2012, the FDA established a Breakthrough Therapy Designation which is intended to expedite the development and review of products that treat serious or life-threatening conditions.

We may seek orphan drug status for one or more of our products candidates, but exclusive marketing rights in the United States may be lost 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 sufficient quantities of the product to meet the needs of patients with the rare disease or condition. In addition, we may seek breakthrough therapy designation for one or more of our product candidates, but there can be no assurance that we will receive such designation.

We will need to obtain FDA approval of any proposed product brand names, and any failure or delay associated with such approval may adversely impact our business.

A biopharmaceutical product cannot be marketed in the United States or other countries until we have completed rigorous and extensive regulatory review processes, including review and approval of a brand name. Any brand names we intend to use for our product candidates will require approval from the FDA regardless of whether we have secured a formal trademark registration from the U.S. Patent and Trademark Office, or the USPTO. The FDA may object to a product brand name if they believe the name creates potential for confusion or inappropriately implies medical claims. If the FDA objects to any of our proposed product brand names, we may be required to adopt an alternative brand name for our product candidates. If we adopt an alternative brand name, we would lose the benefit of our existing trademark applications for such product candidate and may be required to expend significant additional resources in an effort to identify a suitable product brand name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner or at all, which would limit our ability to commercialize our product candidates.

Coverage and reimbursement decisions by third-party payors may have an adverse effect on pricing and market acceptance.

There is significant uncertainty related to the third-party coverage and reimbursement of newly approved drugs. 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. Therefore, market acceptance and sales of our products, if approved, in both domestic and international markets will depend significantly on the availability of adequate coverage and reimbursement from third-party and/or government payors for any of our products and may be affected by existing and future healthcare reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs they will cover and establish approved lists, known as formularies, and establish payment levels for such drugs. Formularies may not include all FDA-approved drugs for a particular indication. Private payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment under Medicare Part D may result in a similar reduction in payments from non-governmental payors. We cannot be certain that coverage and adequate reimbursement will be available for any of our products, if approved, or that such coverage and reimbursement will be authorized in a timely fashion. Also, we cannot be certain that reimbursement policies will not reduce the demand for, or the price paid for, any of our products, if approved. If reimbursement is not available or is available on a limited basis for any of our products, if approved, we may not be able to successfully commercialize any such products.

Reimbursement by a third-party or government payor may depend upon a number of factors, including, without limitation, the third-party or government 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 for a product from a government or other third-party payor is a time consuming and costly process that could require us to provide supporting scientific, clinical and cost-effectiveness data for the use of our products to the payor. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement or to have pricing set at a satisfactory level. If reimbursement of our products, if any, is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels such as may result where alternative or generic treatments are available, we may be unable to achieve or sustain profitability.

Assuming we obtain coverage for a given product, the resulting reimbursement payment rates might not be adequate or may require co-payments that patients find unacceptably high. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products.

In the United States, third-party payors include federal and state healthcare programs, government authorities, private managed care providers, private health insurers, and other organizations. No uniform policy of coverage and reimbursement for products exists among third-party payors, and third-party payors are increasingly challenging the price, examining the medical necessity, and reviewing the cost-effectiveness of medical drug products and medical services, in addition to questioning their safety and efficacy. 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 products to each payor separately, with no assurance that coverage and adequate reimbursement will be obtained. We or our collaborators 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.

In some foreign countries, particularly in Europe, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct additional clinical trials that compare the cost-effectiveness of our products to other available therapies. If reimbursement of any of our products, if approved, is unavailable or limited in scope or amount in a particular country, or if pricing is set at unsatisfactory levels, we may be unable to achieve or sustain profitability of our products in such country.

Recent legislative and regulatory activity may exert downward pressure on potential pricing and reimbursement for our products, if approved, that could materially affect the opportunity to commercialize.

The United States and several other jurisdictions are considering, or have already enacted, a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell any of our products profitably, if approved. Among policy-makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. There have been, and likely will continue to be, legislative and regulatory proposals at the federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. 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 may adversely affect:

- the demand for any of our products, if approved;
- our ability to set a price that we believe is fair for any of our products, if approved;
- our ability to generate revenues and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

In March 2010, ACA became law in the United States. The goal of ACA is to reduce the cost of healthcare, broaden access to health insurance, constrain healthcare spending, enhance remedies against fraud and abuse, add transparency requirements for the healthcare and health insurance industries, impose taxes and fees on the health industry, impose additional health policy reforms, and substantially change the way healthcare is financed by both governmental and private insurers. While we cannot predict what impact on federal reimbursement policies this legislation will have in general or on our business specifically, ACA may result in downward pressure on pharmaceutical reimbursement, which could negatively affect market acceptance of any of our products, if they are approved. Provisions of ACA relevant to the pharmaceutical industry include the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs, not including orphan drug sales;
-

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;

- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts on negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- 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 certain 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;
- new requirements for certain manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program, with specific exceptions to report annually certain financial arrangements with physicians and teaching hospitals, as defined in ACA and its implementing regulations, including reporting any payment or "transfer of value" provided to physicians and teaching hospitals and any ownership and investment interests held by physicians and their immediate family members during the preceding calendar year;
- expansion of healthcare fraud and abuse laws, including the federal False Claims Act and the federal Anti-Kickback Statute, new government investigative powers and enhanced penalties for noncompliance;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; and
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted, or injected.

The ACA has been modified and amended recently, including the elimination of the individual mandate that individuals purchase healthcare insurance. Furthermore, the current presidential administration and Congress are also expected to attempt more broad sweeping changes to the current health care laws. We face uncertainties that might result from modification or repeal of any of the provisions of the ACA, including as a result of current and future executive orders and legislative actions. The impact of those changes on us and potential effect on the pharmaceutical and biotechnology industry as a whole is currently unknown. But, any changes to the ACA are likely to have an impact on our results of operations, and may have a material adverse effect on our results of operations. We cannot predict what other healthcare programs and regulations will ultimately be implemented at the federal or state level or the effect of any future legislation or regulation in the United States may have on our business.

We are subject to governmental export and import controls that could impair our ability to compete in international markets due to licensing requirements and subject us to liability if we are not in compliance with applicable laws.

Our products and solutions are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls. Exports of our products and solutions outside of the United States must be made in compliance with these laws and regulations. If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges; fines, which may be imposed on us and responsible employees or managers; and, in extreme cases, the incarceration of responsible employees or managers.

In addition, changes in our products or solutions or changes in applicable export or import laws and regulations may create delays in the introduction, provision, or sale of our products and solutions in international markets, prevent customers from using our products and solutions or, in some cases, prevent the export or import of our products and solutions to certain countries, governments or persons altogether. Any limitation on our ability to export, provide, or sell our products and solutions could adversely affect our business, financial condition and results of operations.

We are subject to U.S. and foreign anti-corruption and anti-money laundering laws with respect to our operations and non-compliance with such laws can subject us to criminal and/or civil liability and harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and possibly other state and national anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, third-party intermediaries, joint

venture partners and collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector. We currently use contract research organizations abroad for clinical trials. In addition, we may engage third party intermediaries to sell our products and solutions abroad once we enter a commercialization phase for our product candidates and/or to obtain necessary permits, licenses, and other regulatory approvals. We or our third-party intermediaries may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities. We can be held liable for the corrupt or other illegal activities of these third-party intermediaries, our employees, representatives, contractors, partners, and agents, even if we do not explicitly authorize or have actual knowledge of such activities.

We adopted an anti-corruption policy in connection with the consummation of the IPO of our common stock in July 2015. The anti-corruption policy mandates compliance with the FCPA and other anti-corruption laws applicable to our business throughout the world. However, there can be no assurance that our employees and third party intermediaries will comply with this policy or such anti-corruption laws. Noncompliance with anti-corruption and anti-money laundering laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other investigations, or other enforcement actions are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations and financial condition could be materially harmed. In addition, responding to any action will likely result in a materially significant diversion of management's attention and resources and significant defense and compliance costs and other professional fees. In certain cases, enforcement authorities may even cause us to appoint an independent compliance monitor which can result in added costs and administrative burdens.

Risks Relating to Our Intellectual Property

If our efforts to protect the intellectual property related to our product candidates 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 contractual agreements, including confidentiality agreements to protect the intellectual property related to our product candidates and technology. Any disclosure to or misappropriation by third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, eroding our competitive position in the market. We believe that we have worldwide commercial rights to the NK-92 cell line and we believe that we control commercial use of our haNK, taNK and t-haNK cells in key territories. We have developed and in-licensed numerous patents and patent applications and we possess substantial know-how and trade secrets relating to the development and commercialization of natural killer cell-based immunotherapy product candidates, including related manufacturing processes and technology. Our owned and licensed patent portfolio consists of patents and pending patent applications in the U.S. disclosing subject matter directed to certain of our proprietary technology, inventions, and improvements and our most advanced product candidates, as well as licensed and owned patents and pending applications in jurisdictions outside of the U.S., that, in many cases, are counterparts to the foregoing U.S. patents and patent applications. We believe we have intellectual property rights that are necessary to commercialize haNK, taNK and t-haNK cells. However, our patent applications may not result in issued patents, and, even if issued, the patents may be challenged and invalidated. Moreover, our patents and patent applications may not be sufficiently broad to prevent others from practicing our technologies or developing competing products. We also face the risk that others may independently develop similar or alternative technologies or may design around our proprietary property.

The patent application process, also known as patent prosecution, is expensive and time-consuming, and we and our current or future licensors and licensees may not be able to prepare, file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we or our current licensors, or any future licensors or licensees, will fail to identify patentable aspects of inventions made in the course of development and commercialization activities before it is too late to obtain patent protection on them. Therefore, these and any of our patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. Defects of form in the preparation or filing of our patents or patent applications may exist, or may arise in the future, for example with respect to proper priority claims, inventorship, etc. If we or our current licensors, or any future licensors or licensees, fail to establish, maintain or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our current licensors, or any future licensors or licensees, are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised. If there are material defects in the form or preparation of our patents or patent applications, such patents or applications may be invalid and unenforceable. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

The strength of patents in the biopharmaceutical field involves complex legal and scientific questions and can be uncertain. This uncertainty includes changes to the patent laws through either legislative action to change statutory patent law or court action that may reinterpret existing law or rules in ways affecting the scope or validity of issued patents. The patent applications that we own or in-license may fail to result in issued patents in the United States or foreign countries with claims that cover our product candidates. We are currently involved in a dispute with the US. Patent and Trademark Office over one of our patent applications, as described in Part I, Item 3 “Legal Proceedings” of this Annual Report on Form 10-K. Even if patents do successfully issue from the patent applications that we own or in-license, third parties may challenge the validity, enforceability or scope of such patents, which may result in such patents being narrowed, invalidated or held unenforceable.

For example, patents granted by the European Patent Office, or EPO, may be challenged, also known as opposed, by any person within nine months from the publication of their grant. In this regard, we note that a third party filed an opposition in the EPO seeking revocation of one of our European patents relating to composition of matter claims and method of use claims, and the EPO subsequently revoked that patent in April 2017. A third party also filed an opposition in the EPO seeking revocation of a related European patent with composition of matter claims and method of use claims in October 2015. Oral proceedings before the EPO Opposition Division for this patent are scheduled in March 2018.

Any successful challenge to our patents could deprive us of exclusive rights necessary for the successful commercialization of our product candidates. Furthermore, even if they are unchallenged, our patents may not adequately protect our product candidates, provide exclusivity for our product candidates, or prevent others from designing around our claims. If the breadth or strength of protection provided by the patents we hold or pursue with respect to our product candidates is challenged, it could dissuade companies from collaborating with us to develop, or threaten our ability to commercialize our product candidates.

Patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after its earliest effective non-provisional filing date. Various extensions may be available; however the life of a patent, and the protection it affords, is limited. Without patent protection for our product candidates, we may be open to competition from generic versions of our product candidates. Further, if we encounter delays in our development efforts, including our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced.

In addition to the protection afforded by patents, we also rely on trade secret protection to protect proprietary know-how that may not be patentable or that we elect not to patent, processes for which patents may be difficult to obtain or enforce, and any other elements of our product candidates, and our product development processes (such as a manufacturing and formulation technologies) that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. If the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating any trade secrets. Misappropriation or unauthorized disclosure of our trade secrets could significantly affect our competitive position and may have a material adverse effect on our business. Furthermore, trade secret protection does not prevent competitors from independently developing substantially equivalent information and techniques and we cannot guarantee that our competitors will not independently develop substantially equivalent information and techniques. The FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all.

In an effort to protect our trade secrets and other confidential information, we require our employees, consultants, advisors, and any other third parties that have access to our proprietary know-how, information or technology, for example, third parties involved in the formulation and manufacture of our product candidates, and third parties involved in our clinical trials to execute confidentiality agreements upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. However, we cannot be certain that our trade secrets and other confidential proprietary information will not be disclosed despite having such confidentiality agreements. Adequate remedies may not exist in the event of unauthorized use or disclosure of our trade secrets. In addition, in some situations, these confidentiality agreements may conflict with, or be subject to, the rights of third parties with whom our employees, consultants, or advisors have previous employment or consulting relationships. To the extent that our employees, consultants or contractors use any intellectual property owned by third parties in their work for us, disputes may arise as to the rights in any related or resulting know-how and inventions. If we are unable to prevent unauthorized material disclosure of our trade secrets to third parties, we may 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.

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 on obtaining and enforcing patents. Obtaining and enforcing patents in the pharmaceutical industry involves both technological and legal complexity, and therefore, is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Further, recent U.S. Supreme Court rulings have either narrowed the scope of patent protection available in certain circumstances or 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.

For our U.S. patent applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law. In September 2011, the Leahy-Smith America Invents Act, or the American Invents Act, or AIA, was signed into law. The AIA includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The USPTO has developed regulations and procedures to govern administration of the AIA, and many of the substantive changes to patent law associated with the AIA. It still remains unclear what other, if any, impact the AIA will have on the operation of our business. Moreover, the AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

An important change introduced by the AIA is that, as of March 16, 2013, the United States transitioned to a "first-inventor-to-file" system for deciding which party should be granted a patent when two or more patent applications are filed by different parties claiming the same invention. A third party that files a patent application in the USPTO after that date but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by the third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Furthermore, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our technology and the prior art allow our technology to be patentable over the prior art. 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 either (1) file any patent application related to our product candidates or (2) invent any of the inventions claimed in our patents or patent applications.

Among some of the other changes introduced by the AIA are changes that limit where a patentee may file a patent infringement suit and providing opportunities for third parties to challenge any issued patent in the USPTO. This applies to all of our U.S. patents, even those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal court necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action.

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

The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent prosecution process. Periodic maintenance fees and various other governmental fees on any issued patent and/or pending patent applications are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of a patent or patent application. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees. While an inadvertent lapse may sometimes be cured by payment of a late fee or by other means in accordance with the applicable rules, there are many 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. If we fail to maintain the patents and patent applications directed to our product candidates, our competitors might be able to enter the market earlier than should otherwise have been the case, which would have a material adverse effect on our business.

Third-party claims alleging intellectual property infringement may adversely affect our business.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties, for example, the intellectual property rights of competitors. Our research, development and commercialization

activities may be subject to claims that we infringe or otherwise violate patents owned or controlled by third parties. 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 the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our activities related to our product candidates may give rise to claims of infringement of the patent rights of others. We cannot assure you that our product candidates will not infringe existing or future patents. We may not be aware of patents that have already issued that a third party, for example a competitor in our market, might assert are infringed by our product candidates. It is also possible that patents of which we are aware, but which we do not believe are relevant to our product candidates, could nevertheless be found to be infringed by our product candidates. Nevertheless, we are not aware of any issued patents that we believe would prevent us from marketing our product candidates, if approved. There may also be patent applications that have been filed but not published that, when issued as patents, could be asserted against us.

Third parties making claims against us for infringement or misappropriation of their intellectual property rights may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Further, if a patent infringement suit were brought against us, we could be forced to stop or delay research, development, manufacturing or sales of the product or product candidate that is the subject of the suit. Defense of these claims, regardless of their merit, would cause us to incur substantial expenses and, and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us by a third party, we may have to (1) pay substantial damages, including treble damages and attorneys' fees if we are found to have willfully infringed the third party's patents; (2) obtain one or more licenses from the third party; (3) pay royalties to the third party; and/or (4) redesign any infringing products. Redesigning any infringing products may be impossible or require substantial time and monetary expenditure. Further, we cannot predict whether any required license would be available at all or whether it would be available on commercially reasonable terms. In the event that we could not obtain a license, we may be unable to further develop and commercialize our product candidates, which could harm our business significantly. Even if we are able to obtain a license, the license would likely obligate us to pay license fees or royalties or both, and the rights granted to us might be nonexclusive, which could result in our competitors gaining access to the same intellectual property. Ultimately, we could be prevented from commercializing a product, or be forced to cease some aspect of our business operations, if, as a result of actual or threatened patent infringement claims, we are unable to enter into licenses on acceptable terms.

Defending ourselves or our licensors in litigation is very expensive, particularly for a company of our size, and time-consuming. Some of our competitors may be able to sustain the costs of litigation or administrative proceedings more effectively than we can because of greater financial resources. Patent litigation and other proceedings may also absorb significant management time. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could impair our ability to compete in the marketplace. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition or results of operations.

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

Third parties may infringe or misappropriate our intellectual property, including our existing patents, patents that may issue to us in the future, or the patents of our licensors to which we have a license. As a result, we may be required to file infringement claims to stop third-party infringement or unauthorized use. Further, we may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

Generic drug manufacturers may develop, seek approval for, and launch generic versions of our products. If we file an infringement action against such a generic drug manufacturer, that company may challenge the scope, validity or enforceability of our or our licensors' patents, requiring us and/or our licensors to engage in complex, lengthy and costly litigation or other proceedings.

For example, if we or one of our licensors initiated legal proceedings against a third party to enforce a patent covering our product candidates, the defendant could counterclaim that the patent covering our product candidates 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.

In addition, within and outside of the United States, there has been a substantial amount of litigation and administrative proceedings, including interference and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in various foreign jurisdictions, regarding patent and other intellectual property rights in the biopharmaceutical industry. Recently, the AIA introduced new procedures including inter partes review and post grant review. The implementation of these procedures brings uncertainty to the possibility of challenges to

our patents in the future, including those that patents perceived by our competitors as blocking entry into the market for their products, and the outcome of such challenges.

In March 2009, we received a final rejection in one of our original patent applications pertaining to certain limited methods of use claims for NK-92 from the USPTO (but the USPTO allowed claims on all of the other proposed claims, including other methods of use). We filed a Notice of Appeal to the USPTO Board of Appeals and Interferences and a Decision on Appeal was rendered in the fall of 2013. That decision reversed the Examiner's rejection of the claim to certain limited methods of use with NK-92, but affirmed the Examiner's rejection of the remaining patent claims. In December 2013, we brought an action in the U.S. District Court for the Eastern District of Virginia to review the decision of the USPTO as we disagreed with the decision as to the certain limited non-allowed claims. On September 2, 2015, the U.S. District Court granted the USPTO's motion for summary judgment. On September 24, 2015, we filed a notice of appeal to the United States Court of Appeals for the Federal Circuit. In September 2015, the USPTO filed a Motion for Expenses seeking $0.1 million for attorney's fees and the USPTO's expert witness fees. In February 2016, the U.S. District Court denied the USPTO's Motion for Expenses for attorney's fees and granted Director's Motion for Expenses for the USPTO's expert witness fees. The USPTO filed a notice of appeal on April 5, 2016. In May 2017, the Federal Circuit affirmed the U.S. District Court's summary judgment ruling. The formal mandate was issued on June 26, 2017. In June 2017, the Federal Circuit reversed the U.S. District Court and remanded the case for the U.S. District Court to enter an award of $0.1 million in favor of the USPTO. On August 31, 2017, a majority of active Federal Circuit judges voted to vacate the June 2017 decision and hear the case en banc sua sponte. The USPTO filed its opening brief on November 15, 2017. We filed our opening brief on January 16, 2018. The USPTO filed its reply brief on January 31, 2018. Oral argument was heard on March 8, 2018.

Such litigation and administrative proceedings could result in revocation of our patents or amendment of our patents such that they do not cover our product candidates. They may also put our pending patent applications at risk of not issuing, or issuing with limited and potentially inadequate scope to cover our product candidates. The outcome following legal assertions of 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 and the patent examiner were unaware during prosecution. Additionally, it is also possible that prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, may, nonetheless, ultimately be found by a court of law or an administrative panel to affect the validity or enforceability of a claim, for example if a priority claim is found to be improper. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection could have a material adverse impact on our business.

Enforcing our or our licensor's intellectual property rights through litigation is very expensive, particularly for a company of our size, and time-consuming. Some of our competitors may be able to sustain the costs of litigation more effectively than we can because of greater financial resources. Patent litigation and other proceedings may also absorb significant management time. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could impair our ability to compete in the marketplace. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition or results of operations.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation or administrative proceedings, there is a risk that some of our confidential information could be compromised by disclosure. In addition, during the course of litigation or administrative proceedings, there could be public announcements of the results of hearings, motions or other interim proceedings or developments or public access to related documents. If investors perceive these results to be negative, the market price for our common stock could be significantly harmed.

If we fail to comply with our obligation in any of the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

Licensing of intellectual property rights is of critical importance to our business and involves complex legal, business and scientific issues. We rely on our exclusive license from Hans Klingemann, M.D., Ph.D., one of our founders and

the inventor of our aNK and related platform product cell therapies, and may rely on our exclusive licenses from Rush University Medical Center and other licensors such as Fox Chase Cancer Research Center and the University Health Network. If we fail to comply with the diligence obligations or otherwise materially breach our license agreement, and fail to remedy such failure or cure such breach, the licensor may have the right to terminate the license.

Our obligation to pay royalties to Dr. Klingemann under the license agreement, as amended, runs until the expiration of the underlying patents and the license agreement may be terminated earlier by either party for material breach. Under the license agreement, we have the right to enforce the licensed patents. Our license agreement with Rush University Medical Center terminates on the 12th anniversary of our first payment of royalties, at which point the license is deemed perpetual, irrevocable, fully-paid royalty-free, exclusive license, and may be terminated earlier by either party for material breach.

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

- the scope of rights granted under the license agreement and other interpretation-related issues;
- our right to sublicense intellectual property rights to third parties under collaborative development relationships; and
- 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.

While we would expect to exercise all rights and remedies available to us, including seeking to cure any breach by us, and otherwise seek to preserve our rights under the patents licensed to us, we may not be able to do so in a timely manner, at an acceptable cost or at all. Generally, the loss of any one of our current licenses, or any other license we may acquire in the future, could materially harm our business, prospects, financial condition and results of operations.

Confidentiality agreements with employees and others may not adequately prevent disclosure of our trade secrets and other proprietary information and may not adequately protect our intellectual property, which could limit our ability to compete.

Because we operate in the highly technical field of research and development, we rely in part on trade secret protection in order to protect our proprietary trade secrets and unpatented know-how. However, trade secrets are difficult to protect, and we cannot be certain that others will not develop the same or similar technologies on their own. We have taken steps, including entering into confidentiality agreements with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors, to protect our trade secrets and unpatented know-how. These agreements generally require that the other party keep confidential and not disclose to third parties all confidential information developed by the party or made known to the party by us during the course of the party's relationship with us. We also typically obtain agreements from these parties which provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, these agreements may not be honored and may not effectively assign intellectual property rights to us. Enforcing a claim that a party illegally obtained and is using our trade secrets or know-how is difficult, expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the United States may be less willing to protect trade secrets or know-how. The failure to obtain or maintain trade secret protection could adversely affect our competitive position.

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 improperly used or disclosed confidential information of these third parties or our employees' former employers. Further, we may be subject to ownership disputes in the future arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. We may also be subject to claims that former employees, consultants, independent contractors, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging our right to and use of confidential and proprietary information. If we fail in defending any such claims, in addition to paying monetary damages, we may lose our rights therein. Such an outcome could have a material adverse effect on our business. 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.

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

We strive to control cell line distribution as well as limit commercial use through licenses and material transfer agreements with third parties in addition to its patents and patent applications. However, a company may illicitly obtain our cells or create their own modified variants and attempt to commercialize them in foreign countries where

we do not have any patents or patent applications where legal recourse may be limited. For example, we believe that a company in China may be using our NK-92 cell line without our permission. This may have a significant commercial impact on our foreign business operations.

Filing, prosecuting and defending patents on our product candidates in all countries throughout the world would be prohibitively expensive. The requirements for patentability may differ in certain countries, particularly developing countries. For example, China has a heightened requirement for patentability, and specifically requires a detailed description of medical uses of a claimed drug. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as 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. 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 on infringing activities is inadequate. 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 and other intellectual property protection, particularly those relating to pharmaceuticals, 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. In addition, certain countries in Europe and certain developing countries, including India and China, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we may have limited remedies if our patents are infringed or if we are compelled to grant a license to our patents to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. 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 own or license. Finally, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws.

Risks Relating to Our Common Stock

Our Chairman and CEO and entities affiliated with him collectively own a significant majority of our common stock and will exercise significant influence over matters requiring stockholder approval, regardless of the wishes of other stockholders.

As of December 31, 2017, our Chairman and CEO, Patrick Soon-Shiong, M.D., and entities affiliated with him, collectively own approximately 59.2% of the outstanding shares of our common stock. Additionally, Dr. Soon-Shiong is the owner of options, a warrant and restricted stock units to purchase an aggregate of 20.3 million shares of our common stock which would give him and his affiliates ownership of approximately 67.6% of our outstanding shares of common stock if they were fully vested and exercised in full. In addition, pursuant to the Nominating Agreement between us and Cambridge Equities, LP, or Cambridge, an entity that Dr. Soon-Shiong controls, Cambridge has the ability to designate one director to be nominated for election to our board of directors for as long as Cambridge continues to hold at least 20% of the issued and outstanding shares of our common stock. Dr. Soon-Shiong was selected by Cambridge to hold this board seat. Dr. Soon-Shiong and his affiliates will therefore have significant influence over management and significant control over matters requiring stockholder approval, including the annual election of directors and significant corporate transactions, such as a merger or other sale of our company or its assets, for the foreseeable future. This concentrated control will limit stockholders' ability to influence corporate matters and, as a result, we may take actions that our stockholders do not view as beneficial. As a result, the market price of our common stock could be adversely affected.

The market price of our stock may fluctuate significantly, and investors may have difficulty selling their shares.

Prior to our IPO in July 2015, there was no public market for our common stock. Although our common stock is listed on The NASDAQ Global Select Market, the market for our shares has demonstrated varying levels of trading activity. You may not be able to sell your shares quickly or at the market price if trading in shares of our common stock is not active. Further, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration.

The market price of our common stock has been and may continue to be volatile.

The stock market in general and the market for biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. The market price of our common stock has been and may 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:

- the commencement, enrollment or results of the 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;
- 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;
- adverse results or delays in clinical trials;
- our decision to initiate a clinical trial, not to initiate a clinical trial or to terminate an existing clinical trial;
- 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;
- our failure to commercialize our product candidates;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to the use of our product candidates;
- announcements by us or our competitors of significant contracts, acquisitions, strategic partnerships, joint ventures or capital commitments;
- our ability to effectively manage our growth;
- variations in our quarterly operating results;
- our cash position;
- announcements that our revenue or income are below or that costs or losses are greater than analysts' expectations;
- 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;
- general economic slowdowns;
- sales of large blocks of our common stock;
- fluctuations in stock market prices and volumes;
- 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; and
- the other factors described in this "Risk Factors" section.

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, such as the securities litigation described in Note 8 – Commitments and Contingencies – Securities Litigation to our condensed consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results or financial condition.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plan and the warrant held by our Chairman and CEO, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. If our stockholders sell, or the market perceives that our stockholders intend to sell, substantial amounts of our common stock in the public market the market price of our common stock could decline significantly. In particular, the options, warrant, and restricted stock units to purchase or receive common stock held by our Chairman and CEO at December 31, 2017, may entitle him to acquire up to an aggregate of 20.3 million shares of our common stock, or approximately 25.8% of our outstanding common stock. Sales of stock by these stockholders could have a material adverse effect on the trading price of our common stock.

Certain holders of approximately 52.7 million shares of our common stock, including shares issuable upon the exercise of outstanding options and warrants, are entitled to certain rights with respect to the registration of their shares under the Securities Act. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares held by our affiliates as defined in Rule 144 under the Securities Act. Any sales of securities by these stockholders could have a material adverse effect on the market price of our common stock.

In addition, we expect that 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.

We have incurred and will continue to incur costs as a result of operating as a public company and our management has been and will be required to devote substantial time to new compliance initiatives and corporate governance practices, including maintaining an effective system of internal control over financial reporting.

As a public company listed in the United States, and increasingly after we are no longer an “emerging growth company,” we have incurred and will continue to incur significant additional legal, accounting and other expenses that we did not incur as a private company. In addition, changing laws, regulations and standards relating to corporate governance and public disclosure, including Sarbanes-Oxley and regulations implemented by the Securities and Exchange Commission or SEC, and The NASDAQ Stock Market, or NASDAQ, may increase legal and financial compliance costs and make some activities more time consuming. These laws, regulations and standards are subject to varying interpretations and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. We intend to invest resources to create a larger finance function with additional personnel to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management’s time and attention from revenue-generating activities to compliance activities. If notwithstanding our efforts to comply with new laws, regulations and standards, we fail to comply, regulatory authorities may initiate legal proceedings against us and our business may be harmed.

As a public company in the United States, we are required, pursuant to Section 404 of Sarbanes-Oxley, or Section 404, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. We must disclose any material weaknesses identified by our management in our internal control over financial reporting, and, when we are no longer an “emerging growth company,” we will need to provide a statement that our independent registered public accounting firm has issued an opinion on our internal control over financial reporting.

The controls and other procedures are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is disclosed accurately and is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms. Our independent registered public accounting firm was not engaged to perform an audit of our internal control over financial reporting for the year ended December 31, 2017 or for any other period. Accordingly, no such opinion was expressed.

Even after we develop these new procedures, these new controls may become inadequate because of changes in conditions or the degree of compliance with these policies or procedures may deteriorate and material weaknesses in our internal control over financial reporting may be discovered. We may err in the design or operation of our controls, and all internal control systems, no matter how well designed and operated, can provide only reasonable assurance that the objectives of the control system are met. Because there are inherent limitations in all control systems, there can be no absolute assurance that all control issues have been or will be detected. If we are unable, or are perceived as unable, to produce reliable financial reports due to internal control deficiencies, investors could lose confidence in our reported financial information and operating results, which could result in a negative market reaction.

To fully comply with Section 404, we will need to retain additional employees to supplement our current finance staff, and we may not be able to do so in a timely manner, or at all. In addition, in the process of evaluating our internal control over financial reporting, we expect that certain of our internal control practices will need to be updated to comply with the requirements of Section 404 and the regulations promulgated thereunder, and we may not be able to do so on a timely basis, or at all. In the event that we are not able to demonstrate compliance with Section 404 in a timely manner, or are unable to produce timely or accurate financial statements, we may be subject to sanctions or investigations by regulatory authorities, such as the SEC or NASDAQ, and investors may lose confidence in our operating results and the price of our common stock could decline. Furthermore, if we are unable to certify that our internal control over financial reporting is effective and in compliance with Section 404, we may be subject to sanctions or investigations by regulatory authorities, such as the SEC or stock exchanges, and we could lose investor confidence in the accuracy and completeness of our financial reports, which could hurt our business, the price of our common stock and our ability to access the capital markets.

We also expect that being a public company will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, on committees of our board of directors or as members of senior management.

The restatement of our interim financial statements for the quarters ended June 30, 2015 and September 30, 2015 may affect shareholder confidence, may consume a significant amount of our time and resources, and may have a material adverse effect on our business and stock price.

As disclosed in our Current Report on Form 8-K filed with the SEC on March 10, 2016, we have restated our interim financial statements for the quarters ended June 30, 2015 and September 30, 2015. The restatements, which are included in our 2015 Annual Report, are attributable to certain stock-based awards to the Company’s Chairman and Chief Executive Officer (CEO) and build-to-suit lease accounting related to one of its research and development and cGMP facilities. Specifically, errors resulted from the modification of the performance-based vesting criteria to a combination of performance-based and services-based vesting criteria of a warrant subsequent to the grant date and the value of non-cash, stock-based compensation expense recorded by the Company for the quarters ended June 30, 2015 and September 30, 2015. The error related to the use of build-to-suit lease accounting, which resulted from the Company’s involvement in the construction of structural improvements to the leased facility space and, therefore, was deemed the owner, for accounting purposes, of the construction project having a non-cash impact for the quarters ending June 30, 2015 and September 30, 2015.

Although we have remediated the material weakness associated with the restatements described above, if any additional material weaknesses or significant deficiencies in our internal control over financial reporting are discovered or occur in the future, our consolidated financial statements may contain material misstatements and we could be required to further restate our financial results. In addition, if we are unable to successfully remediate any future material weaknesses in our internal controls or if we are unable to produce accurate and timely financial statements, our stock price may be adversely affected and we may be unable to maintain compliance with applicable stock exchange listing requirements.

We have not paid cash dividends in the past and do not expect to pay dividends in the future. Any return on investment may be limited to the value of our common stock.

We have never paid cash dividends on our common stock and do not anticipate paying cash dividends in the foreseeable future. The payment of dividends on our common stock will depend on earnings, financial condition and other business and economic factors affecting us at such time as the board of directors may consider relevant. If we do not pay dividends, our common stock may be less valuable because a return on your investment will only occur if our stock price appreciates.

Because we are relying on the exemptions from corporate governance requirements as a result of being a "controlled company" within the meaning of the NASDAQ listing standards, you do not have the same protections afforded to stockholders of companies that are subject to such requirements.

Our Chairman and CEO, Dr. Patrick Soon-Shiong, and entities affiliated with him, control a majority of our common stock. As a result, we are a "controlled company" within the meaning of the NASDAQ listing standards. Under these rules, a company of which more than 50% of the voting power is held by an individual, a group or another company is a "controlled company" and may elect not to comply with certain NASDAQ corporate governance requirements, including (1) the requirement that a majority of the board of directors consist of independent directors and (2) the requirement that we have a nominating and corporate governance committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities. We have elected not to have a nominating and corporate governance committee in reliance on the "controlled company" exemptions. Accordingly, you do not have the same protections afforded to stockholders of companies that are subject to all of the NASDAQ corporate governance requirements.

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

We are an "emerging growth company," as defined in the JOBS Act enacted in April 2012, or the JOBS Act, and may remain an "emerging growth company" for up to five years following the completion of our IPO, or December 31, 2020, although, if we have more than $1.0 billion in annual revenue, the market value of our common stock that is held by non-affiliates exceeds $700.0 million as of June 30 of any year, or we issue more than $1.0 billion of non-convertible debt over a three-year period before the end of that five-year period, we would cease to be an "emerging growth company" as of the following December 31. For as long as we remain an "emerging growth company," we are permitted and intend to continue to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not "emerging growth companies." These exemptions include:

- being permitted to provide only two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced "Management's discussion and analysis of financial condition and results of operations" disclosure;
- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

We have taken advantage of reduced reporting requirements in our public filings. In particular, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, delaying the adoption of these accounting standards until they would apply to private companies. We have irrevocably elected not to avail ourselves of this exemption and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies. Investors may find our common stock less attractive as a result of our reliance on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and the market price of our common stock may be reduced or more volatile.

Our ability to use our net operating loss carryforwards, or NOLs, and certain other tax attributes to offset future taxable income may be subject to certain limitations.

As of December 31, 2017 we had U.S. federal, state and foreign NOLs of approximately $165.9 million, $136.2 million and $0.2 million, respectively, which begin to expire in various years starting with 2022, if not utilized. As of December 31, 2017, we also had federal and state research and development tax credit carryforwards of approximately $3.2 million and $1.9 million, respectively. Under Sections 382 and 383 of Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change NOLs and other pre-change tax attributes, such as research tax credits, to offset its future post-change income and taxes may be limited. In general, an "ownership change" occurs if there is a cumulative change in our ownership by "5% shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. We completed an IRC Section 382/383 analysis in 2016 regarding the limitation of net operating loss and research and development credit carryforwards. As a result of the analysis, we have derecognized deferred tax assets for net operating losses and federal and state research and development credits of $0.8 million and $1.2 million from our deferred tax asset schedule as of December 31, 2017 and 2016, respectively.

We are a U.S.-based company subject to tax in the U.S. and in Korea. Significant judgment is required in determining our global provision for income taxes, deferred tax assets or liabilities, and in evaluating our tax positions on a worldwide basis. While we believe our tax positions are consistent with the tax laws in the jurisdictions in which we conduct our business, it is possible that these positions may be overturned by jurisdictional tax authorities, which may have a significant impact on our global provision for income taxes.

Tax laws are dynamic and subject to change as new laws are passed and new interpretations of the law are issued or applied. The U.S. recently enacted significant tax reform, and certain provisions of the new law may adversely affect us. In addition, governmental tax authorities are increasingly scrutinizing the tax positions of companies. U.S. or other foreign tax authorities change applicable tax laws, our overall taxes could increase, and our business, financial condition or results of operations may be adversely impacted.

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

The trading market for our common stock will depend on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. There can be no assurance that analysts will cover us or provide favorable coverage. If one or more of the analysts who cover us downgrade our stock or change their opinion of our stock, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

We are not subject to the provisions of Section 203 of the Delaware General Corporation Law, which could negatively affect your investment.

We elected in our amended and restated certificate of incorporation to not be subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. A "business combination" includes a merger, asset sale or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" is a person who, together with affiliates and associates, owns (or, in certain cases, within three years prior, did own) 15% or more of the corporation's voting stock. Our decision not to be subject to Section 203 will allow, for example, our Chairman and CEO (who with members of his immediate family and entities affiliated with him owned approximately 59.2% of our common stock as of December 31, 2017) to transfer shares in excess of 15% of our voting stock to a third-party free of the restrictions imposed by Section 203. This may make us more vulnerable to takeovers that are completed without the approval of our board of directors and/or without giving us the ability to prohibit or delay such takeovers as effectively.

Some provisions of our charter documents and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders. These provisions include:

- a requirement that special meetings of stockholders be called only by the board of directors, the president or the chief executive officer;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors; 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.

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.

Claims for indemnification by our directors and officers may reduce our available funds to satisfy successful third-party claims against us and may reduce the amount of money available to us.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that we will indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law. In addition, as permitted by Section 145 of the Delaware General Corporation Law, our amended and restated bylaws and our indemnification agreements that we have entered into with our directors and officers provide that:

- We will indemnify our directors and officers for serving us in those capacities or for serving other business enterprises at our request, to the fullest extent permitted by Delaware law. Delaware law provides that a corporation may indemnify such person if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the registrant and, with respect to any criminal proceeding, had no reasonable cause to believe such person's conduct was unlawful.
- We may, in our discretion, indemnify employees and agents in those circumstances where indemnification is permitted by applicable law.
- We are required to advance expenses, as incurred, to our directors and officers in connection with defending a proceeding, except that such directors or officers shall undertake to repay such advances if it is ultimately determined that such person is not entitled to indemnification.
- We are not be obligated pursuant to our amended and restated bylaws to indemnify a person with respect to proceedings initiated by that person against us or our other indemnitees except with respect to proceedings authorized by our board of directors or brought to enforce a right to indemnification.
- The rights conferred in our amended and restated bylaws are not exclusive, and we are authorized to enter into indemnification agreements with our directors, officers, employees and agents and to obtain insurance to indemnify such persons.
- We may not retroactively amend our bylaw provisions to reduce our indemnification obligations to directors, officers, employees and agents.

To the extent that a claim for indemnification is brought by any of our directors or officers, it would reduce the amount of funds available for use in our business.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

The following table, in order of lease expiration, summarizes the facilities we lease as of December 31, 2017, including the locations and size of the facilities and their designated uses.

Principal Properties Leased:	Approximate Square Feet	Operation	Lease Expiration Dates
Cardiff-by-the-Sea, California	2,550	Office	August 2018
Woburn, Massachusetts	8,153	Laboratory - Research, Office	May 2020
Culver City, California*	9,500	Laboratory - Research & Manufacturing	December 2020
El Segundo, California*	24,250	Laboratory - Research & Manufacturing	July 2023
San Diego, California	44,681	Laboratory - Research, Office	July 2023

* Property leased from a related party

The following table summarizes the facility we own as of December 31, 2017.

Principal Property Owned:	Approximate Square Feet	Operation
El Segundo, California	36,434	Distribution Warehouse

In September 2017, we purchased a commercial building with approximately 36,434 square feet in El Segundo, California. We intend to use the building as a warehouse and distribution facility as it is adjacent to the El Segundo, California, research and manufacturing facility.

In September 2016, we entered into a lease agreement with 605 Doug St, LLC, an entity owned by our Chairman and CEO, for approximately 24,250 square feet in El Segundo, California, which is to be converted to a research and development laboratory and a current Good Manufacturing Practices (cGMP) laboratory. We are responsible for the costs to build out the laboratories and have incurred costs of approximately $30.0 million as of December 31, 2017. The lease runs from July 2016 through July 2023. We have the option to extend the lease for an additional three-year term through July 2026. The monthly rent is $72,385 with annual increases of 3% beginning in July 2017.

We lease a total of approximately 2,550 square feet of office space in Cardiff-by-the-Sea, California, for general office use, pursuant to an operating lease. We amended this lease to extend the term of the lease through August 31, 2018. Our total monthly lease payment is $13,199. In August 2017, we subleased these premises for the remainder of the lease term for the same payment.

In March 2016, the Company entered into a lease agreement for an approximately 7,893 square foot facility in Woburn, Massachusetts, for a research and development laboratory, related office and other related uses. The term of the lease is 48 months commencing on April 29, 2016. In June 2016, the lease was amended to add 260 square feet, for a total of 8,153 square feet. The base rent, including the amendment, is $19,363 per month with a $1 per square foot annual increase on each anniversary date.

In November 2015, we entered into a facility license agreement with NantWorks, effective in May 2015, for approximately 9,500 square feet of office space in Culver City, California, to be converted to a research and development laboratory and a cGMP facility. We were responsible for costs to build out the laboratory and incurred costs of approximately $3.5 million to complete the conversion. The term of the license extends through December 2020. We have the option to extend the license through December 2023. The monthly rent is $47,000 with annual increases of three percent (3%) beginning in January 2017.

In July 2015, we entered into a lease agreement for approximately 3,067 square feet of office space in Cary, North Carolina. The term of the lease is 26 months commencing on July 1, 2015. In 2017, the lease was extended to December 31, 2017. The lease expired in December 2017 and we vacated the premises.

We entered into a lease agreement dated June 19, 2015 for approximately 44,681 square foot of laboratory/office space located in San Diego, California. The permitted use is research and development laboratory, related office and other related uses. The term of the lease extends for seven years commencing on August 1, 2016 and requires us to pay base monthly rent in the amount of $178,724 per month, with three percent (3%) annual increases on each anniversary of the lease commencement date. On July 22, 2015, we entered into a sublease agreement with Novartis Institute for Functional Genomics, Inc., the tenant through July 31, 2016, to sublease this facility prior the lease commencement date. We are currently subleasing approximately 8,500 square feet of the premises to related parties. (See Note 9 of the “Notes to Consolidated Financial Statements.”)

Item 3. Legal Proceedings

From time to time, we may be involved in various other claims and legal proceedings relating to claims arising out of our operations. Except as noted below, we are not currently a party to any other legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Securities Litigation

In March 2016, a putative securities class action complaint captioned Sudunagunta v. NantKwest, Inc., et al., No. 16-cv-01947 was filed in federal district court for the Central District of California related to our restatement of certain interim financial statements for the periods ended June 30, 2015 and September 30, 2015. A number of similar

putative class actions were filed in federal and state court in California. The actions originally filed in state court were removed to federal court, and the various related actions have been consolidated. Plaintiffs assert causes of action for alleged violations of Sections 11 and 15 of the Securities Act of 1933 and Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Rule 10b-5 promulgated thereunder. Plaintiffs seek unspecified damages, costs and attorneys' fees, and equitable/injunctive or other relief on behalf of putative classes of persons who purchased or acquired our securities during various time periods from July 28, 2015 through March 11, 2016. In September 2017, the court denied defendants' motion to dismiss the third amended consolidated complaint. No trial date has been set. Management intends to vigorously defend these proceedings. At this time, we cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. Therefore, based on the information available at present, we cannot reasonably estimate a range of loss for this action. Should we ultimately be found liable, the liability could have a material adverse effect on our results of operations for the period or periods in which it is incurred.

On September 6, 2016, a putative shareholder derivative complaint captioned Bushansky v. Soon-Shiong, et al., No. 37-2016-00030867-CU-SL-CTL was filed in California Superior Court, San Diego County also related to our restatement of certain interim financial statements. The complaint named as defendants our directors and outside auditor at the time of the IPO. The Company is named solely as a nominal defendant. The complaint alleges the directors breached their fiduciary duties to the Company and wasted corporate assets, and that the outside auditors committed malpractice. The complaint seeks, on behalf of the Company, unspecified damages, the return of directors' salaries for unspecified periods, and injunctive relief. At this time, we cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. In April 2017, the court entered a written order of dismissal after granting our motion to dismiss the California complaint based on a corporate charter provision specifying a Delaware forum. Plaintiffs have filed an appeal. Should we ultimately be found liable, the liability could have a material adverse effect on our results of operations for the period or periods in which it is incurred.

In October 2017, the first of two putative stockholder derivative complaints was filed in the Delaware Court of Chancery. The Delaware actions have been consolidated as In re NantKwest, Inc. Derivative Litigation, Cons. C.A. No. 2017-0774- VCL. A consolidated complaint was filed asserting that various of our current and former directors and officers breached their fiduciary duties to the Company based on factual allegations similar to those in the Sudunagunta and Bushansky actions. The complaint seeks damages and other relief on behalf of the Company, which is named solely as a nominal defendant. On February 5, 2018, the defendants filed a motion to dismiss the consolidated complaint. At this time, we cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. Therefore, based on the information available at present, we cannot reasonably estimate a range of loss for this action. Should we ultimately be found liable, the liability could have a material adverse effect on our results of operations for the period or periods in which it is incurred.

Appeal of USPTO Decision

In March 2009, we received a final rejection in one of our original patent applications pertaining to certain limited methods of use claims for NK-92 from the U.S. Patent and Trademark Office (the USPTO), but the USPTO allowed claims on all of the other proposed claims, including other methods of use. We appealed this decision with the USPTO Board of Appeals and, in the fall of 2013, the Board of Appeals reversed the Examiner's rejection of the claim to certain limited methods of use with NK-92, but affirmed the Examiner's rejection of the remaining patent claims. In December 2013, we brought an action in the U.S. District Court for the Eastern District of Virginia to review the decision of the USPTO as we disagreed with the decision as to the certain limited non-allowed claims. On September 2, 2015, the U.S. District Court granted the USPTO's motion for summary judgment. On September 24, 2015, we filed a notice of appeal to the United States Court of Appeals for the Federal Circuit. In September 2015, the USPTO filed a Motion for Expenses seeking $0.1 million for attorney's fees and the USPTO's expert witness fees. In February 2016, the U.S. District Court denied the USPTO's Motion for Expenses for attorney's fees and granted Director's Motion for Expenses for the USPTO's expert witness fees. The USPTO filed a notice of appeal on April 5, 2016. In May 2017, the Federal Circuit affirmed the U.S. District Court's summary judgment ruling. The formal mandate was issued on June 26, 2017. In June 2017, the Federal Circuit reversed the U.S. District Court and remanded the case for the U.S. District Court to enter an award of $0.1 million in favor of the USPTO. On August 31, 2017, a majority of active Federal Circuit judges voted to vacate the June 2017 decision and hear the case en banc sua sponte. The USPTO filed its opening brief on November 15, 2017. We filed our opening brief on January 16, 2018. The USPTO filed its reply brief on January 31, 2018. Oral argument was heard on March 8, 2018. Based on the information available at present, we cannot reasonably estimate a range of loss for this action beyond the attorney and expert witness fees. Accordingly, the awarded fees have been accrued, but no liability associated with this action beyond the fees has been accrued. We are expensing legal costs associated with defending this litigation as the costs are incurred.

From time to time, we may be involved in various other claims and legal proceedings relating to claims arising out of our operations. We are not currently a party to any other legal proceedings that, in the opinion of our management, are

likely to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

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

Market Information for Common Stock

Our common stock began trading on the NASDAQ Global Select Market under the symbol "NK" on July 28, 2015. Prior to that date, there was no public trading market for our common stock. No dividends have been declared or paid. The following table sets forth for the periods indicated the high and low sales prices per share of our common stock as reported on the NASDAQ Global Select Market:

	Price Range	
Year Ended December 31, 2017	High	Low
First Quarter	$6.68	$3.23
Second Quarter	$8.25	$2.71
Third Quarter	$8.45	$5.00
Fourth Quarter	$5.98	$3.65

	Price Range	
Year Ended December 31, 2016	High	Low
First Quarter	$16.90	$6.10
Second Quarter	$10.26	$5.43
Third Quarter	$9.60	$5.89
Fourth Quarter	$7.95	$5.60

Holders of Record

As of March 7, 2018, we had 36 holders of record of our common stock. The actual number of stockholders is greater than the number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust or by other entities.

Dividend Policy

No cash dividends were declared for our common stock during the fiscal year ended in 2017. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on, among other factors, our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

Securities Authorized for Issuance Under Our Equity Compensation Plans

Information regarding our equity compensation plans is incorporated by reference to Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" of Part III of this Annual Report on Form 10-K.

Recent Sales of Unregistered Securities

None

Repurchases of Equity Securities by the Issuer

In November 2015, the board of directors approved a share repurchase program (the 2015 Share Repurchase Program) allowing the CEO or CFO, on behalf of the Company, to repurchase from time to time, in the open market or in privately negotiated transactions, up to $50.0 million of the Company's outstanding shares of common stock, exclusive of any commissions, markups or expenses. The timing and amounts of any purchases will be based on market conditions and other factors, including price, regulatory requirements and other corporate considerations. The program does not require the purchase of any minimum number of shares and may be suspended, modified or discontinued at any time without prior notice. We expect to finance the purchases with existing cash balances. The repurchased shares are formally retired through board approval. At December 31, 2017, $19.1 million remained authorized for repurchase under the Company's stock repurchase program.

	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs (1)	Maximum approximate dollar value of shares that may yet be purchased under the plans or programs (1)
October 1 - October 31	—	$ —	3,072,209	$21.8 million
November 1 - November 30	244,574	$ 4.87	3,316,783	$20.6 million
December 1 - December 31	316,827	$ 4.94	3,633,610	$19.1 million
Total	561,401	$ 4.91		

(1) All repurchases were made under the terms of the 2015 Share Repurchase Program approved by the Company's board of directors in November 2015. Since its inception, we have repurchased 5,791,554 shares of our common stock under this program for a total cost of approximately $30.9 million. At December 31, 2017, approximately $19.1 million remains authorized for repurchase under the 2015 Share Repurchase Program. The Company has incurred approximately $0.1 million of broker commissions on the repurchases to date.

Use of Proceeds

On July 27, 2015, our Registration Statement on Form S-1, as amended (Reg. No. 333- 205124) was declared effective in connection with the IPO of our common stock, pursuant to which we sold 9,531,200 shares at a price to the public of $25.00 per share. The offering closed on July 31, 2015, as a result of which we received net proceeds of approximately $221.5 million after underwriting discounts and offering expenses. Merrill Lynch, Pierce, Fenner & Smith, Incorporated, Citigroup Global Markets Inc., Jefferies LLC and Piper Jaffray & Co. acted as joint book-running managers for the offering, and MLV & Co. LLC Inc. acted as co-manager. No payments for such expenses were made directly or indirectly to (i) any of our officers or directors or their associates, (ii) any persons owning 10% or more of any class of our equity securities, or (iii) any of our affiliates. In November 2015, the board of directors approved a share repurchase program allowing the Chief Executive Officer or Chief Financial Officer, on behalf of the Company, to repurchase from time to time, in the open market or in privately negotiated transactions, up to $50.0 million of our outstanding shares of common stock, exclusive of any commissions, markups or expenses. We may use the proceeds from the IPO to conduct such repurchases. Accordingly, our use of proceeds from the IPO is as follows:

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approximately $2.0 million to fund expenses in connection with our phase II clinical trial for our aNK product candidate for Merkel cell carcinoma single agent therapy, Merkel cell carcinoma combination treatment, and pancreatic combination therapy, which we expect will be sufficient to fund the clinical trials;

- approximately $61.0 million to fund expenses in connection with our current and planned phase I and Ib/II haNK trials, however, we expect that we will need to use additional proceeds to fund future registration vaccine trials related to our haNK product candidate;
- approximately $20.0 million to fund expenses in connection with our planned phase I/II clinical trials for CAR2Brain.taNK for glioblastoma and HER2.taNK for HER2 positive breast cancers, and other diseases and malignancies, which we expect will be sufficient to fund the clinical trials;
- approximately $93.0 million to establish our planned cGMP manufacturing facilities and processes and the hiring of additional personnel; and
- the remaining amounts for other research and development activities, working capital and general corporate purposes, including up to $50.0 million to repurchase our common stock (exclusive of any commissions, markups or expenses) from time to time, in the open market or in privately negotiated transactions.

We may also use a portion of the net proceeds from the offering and our existing cash to in-license, acquire or invest in complementary business, technologies, products or assets. However, we have no current plans, commitments or obligations to do so.

Stock Performance Graph

The following graph compares the cumulative total return to stockholders on our common stock relative to the cumulative total returns of the Russell 2000 Index and the NASDAQ Biotechnology Index. An investment of $100 (with reinvestment of all dividends) is assumed to have been made in our common stock and in each index on July 28, 2015, the date our common stock began trading on the NASDAQ Global Select Market, and its relative performance is tracked through December 31, 2017. The returns shown are based on historical results and are not indicative of, or intended to forecast, future performance of our common stock or the index. This performance graph shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or incorporated by reference into any filing of NantKwest, Inc. under the Securities Act of 1933, as amended, or the Securities Act.

Item 6. Selected Financial Data.

The following selected consolidated financial data should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” the consolidated financial statements and related notes, and other financial information included in this Annual Report on Form 10-K, or Annual Report.

The selected consolidated statements of operations data for the years ended December 31, 2017, 2016 and 2015 and the selected consolidated balance sheet data as of years ended December 31, 2017 and 2016 are derived from our audited consolidated financial statements included elsewhere in this Annual Report. The following selected consolidated statements of operations data for the year ended December 31, 2014 and 2013 and the selected consolidated balance sheet data as of December 31, 2015, 2014 and 2013 are derived from our audited consolidated financial statements not included in this Annual Report.

	For the Year Ended December 31, (In thousands, except per share data)				
	2017	2016	2015	2014	2013
Revenue	$45	$44	$236	$641	$600
Operating expenses:					
Research and development	42,044	29,153	11,434	1,595	446
Selling, general and administrative	57,121	95,391	227,678	4,621	2,423
Total operating expenses	99,165	124,544	239,112	6,216	2,869
Loss from operations	(99,120)	(124,500)	(238,876)	(5,575)	(2,269)
Other income (expense):					
Investment income, net	2,665	3,097	2,988	20	2
Change in fair value of warrant liability	—	—	(1,366)	(158)	684
Interest expense	(618)	(66)	—	(471)	(463)
Other income, net	157	88	77	—	—
Total other income (expense)	2,204	3,119	1,699	(609)	223
Loss before income taxes	(96,916)	(121,381)	(237,177)	(6,184)	(2,046)
Income tax (benefit) expense, net	(493)	(572)	(301)	1	1
Net loss	$(96,423)	$(120,809)	$(236,876)	$(6,185)	$(2,047)
Net loss per share:					
Basic and diluted	$(1.20)	$(1.47)	$(3.31)	$(0.75)	$(2.57)
Weighted average number of shares during the period:					
Basic and diluted	80,583,910	81,979,005	71,519,609	8,246,028	797,105

	As of December 31, (In thousands)				
	2017	2016	2015	2014	2013
Balance Sheet Data:					
Cash and cash equivalents	$23,872	$8,083	$175,908	$59,104	$350
Working capital	111,590	192,592	291,392	57,489	(3,447)
Total assets	250,440	317,496	366,849	59,996	1,243
Total liabilities	31,596	24,078	10,854	2,405	4,998

Total stockholders' equity	218,844	293,418	355,995	57,591	(3,755)

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

The following discussion and analysis of our financial condition and results of operations should be read together with Item 6, "Selected Financial Data," the description of the business appearing in Item 1, "Business," of this report, and the Consolidated Financial Statements in Item 8 of this Annual Report on Form 10-K and the related notes included elsewhere in this report. This discussion contains forward-looking statements as a result of many factors, including those set forth under Item 1, "Business—Forward-Looking Statements" and Item 1A, "Risk Factors," and elsewhere in this Annual Report on Form 10-K. These statements are based on current expectations and assumptions that are subject to risks and uncertainties. Actual results could differ materially from those discussed in or implied by forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this report, particularly in Item 1A, "Risk Factors.

Overview

We are a pioneering clinical-stage immunotherapy company focused on harnessing the power of the innate immune system by using the natural killer cell to treat cancer, infectious diseases and inflammatory diseases. Natural killer, or NK, cells are the body's first line of defense due to their innate ability to rapidly seek and destroy abnormal cells, such as cancer or virally-infected cells, without prior exposure or activation by other support molecules required to activate adaptive immune cells such as T-cells.

We believe that our proprietary NK cell line, coupled with our planned integrated discovery ecosystem, positions us to implement precision cancer medicine by leveraging the advances that have evolved during the past decade and addressing newly discovered challenges of cancer. Cancer is only recently understood to be a complex of rare diseases, with hundreds of patient-specific, cancer-promoting mutated proteins, some known and many more unknown called neoepitopes. Identifying and targeting these mutated proteins is our strategy to overcome the challenges of cancer in the era of genomics, transcriptomics and immuno-oncology. We believe neoepitopes, which are newly discovered antigens, selectively expressed on the cancer cells and not on the essential normal tissue, represent large untapped targeting opportunities for immune effector cells such as our activated NK cells.

Multiple Modes of Tumor Cell Killing. Our immuno-oncology NK platform has multiple modes to potentially induce cell death against the tumor or infected cell by: (1) direct killing by binding to stress ligands expressed by the diseased cell with the release of toxic granules directly into the tumor cell; (2) antibody mediated killing by binding to antibodies, that are either produced in the body in response to vaccination or administered as monoclonal antibody products in combination, and enhancing their cancer killing effect, enabling targeted cell killing through antibody dependent cellular cytotoxicity, or ADCC; and (3) direct targeted killing by binding to known or newly discovered tumor-specific antigens expressed on the surface of tumor cells and inducing cell death by the release of toxic granules directly into the tumor cell and by the release of cytokines and chemokines that recruit additional innate and adaptive immune responses, including the recruitment of cytotoxic T-cells.

Our targeted therapeutic areas include: (1) cancer, focusing on solid tumors, hematological malignancies as well as residual disease such as cancer stem cells, (2) infectious diseases, including viral and other pathogens, and (3) inflammatory diseases, ranging from rare inherited diseases to more prevalent autoimmune disorders.

The NANT Cancer Vaccine. The NANT Cancer Vaccine, or NCV, Program is a personalized therapy that utilizes our off-the-shelf natural killer cells as the backbone of the therapy, which consists of an initial tumor conditioning regimen followed by a molecularly-informed immunologic conditioning therapy. More specifically, the NCV combines tumor genomic, transcriptomic and proteomic data derived from NantOmics' genomic sequencing and proteomic analysis services with the novel delivery of metronomic, albumin bound low-dose chemotherapy in conjunction with certain other agents, followed by a sequenced administration of tumor-associated antigen vaccines and IL-15, all of which potentiate our NK cell therapy to drive immunogenic cell death while avoiding the ravages of toxic high dose chemotherapy. By inducing immunogenic cell death and enhancing a patient's innate and adaptive

immune system, the NCV is designed to attain a long-term, durable response in multiple cancer types with a potential for lower toxicity and improved efficacy in comparison with current standards of care. We believe that employing our NK cell therapy in the context of the NCV would biologically be a more compelling combination for long term success over available standards of care that employ maximum tolerated dose, tolerogenic cell death and immune system compromise.

Our Integrated Discovery Ecosystem for Precision Medicine. In order to effectively target newly discovered neoepitopes, we plan to integrate the following ecosystem to help drive the utility of our NK cell therapies against these cancer-promoting mutated proteins, including the use of our genetically modified NK cells that express the high-affinity CD16 receptor, or haNK, in conjunction with cancer vaccines that induce in vivo antibody formation directed against these mutated proteins as well as the development of NK cells modified to directly target these mutated proteins: (1) a high-speed supercomputing infrastructure to help identify both known antigens on the surface of tumor cells and neoepitopes in clinical patients suffering from cancer, in a timely manner and at large scale; (2) a next-generation genomic, transcriptomic and proteomic sequencing infrastructure to identify the expression of the neoepitopes from peripheral blood samples and on the surface of the tumor cell, developed by our affiliate entity NantOmics; (3) delivering an antigenic neoepitope via an adenoviral or yeast platform developed by an affiliate entity to induce IgG1 in vivo production and enhanced ADCC activity by our haNK therapy; (4) a diverse library of human antibodies from which to interrogate and extract an antibody matching the neoepitope; and (5) a haNK and taNK cell potentially capable of being produced as a scalable cell-based “off-the-shelf” therapy without the need for patient compatibility matching. We expect to regularly add newly discovered neoepitopes from our discovery engine, and we believe the thousands of newly discovered antigens selectively expressed on the cancer cells and not on the essential normal tissue will provide us with the ability to create new and targeted libraries of antibodies to be potentially delivered as living drugs for metastatic cancer cells and cancer stem cells.

We retain exclusive worldwide rights to clinical and research data, intellectual property and know-how developed with our NK cells, as well as what we believe is the only FDA recognized clinical grade master cell bank of aNK and haNK cells in existence.

Since our inception in 2002, we have devoted substantially all of our resources to the discovery and development of our product candidates, including conducting clinical trials, and funding general and administrative support for these operations. The Company has progressed its versatile, cryopreserved off-the-shelf haNK product, safely dosing patients with advanced pancreatic cancer, in its first phase Ib/II NCV study, with ten additional studies newly opened and ready for enrollment in non-small cell lung, triple negative breast, urothelial, head and neck, ovarian and colorectal cancers. Our Merkel cell and pancreatic cancer trials utilizing aNK have been superseded by the trials utilizing cryopreserved haNK. Our studies are all based on a master treatment protocol that is designed to more fully harness the power of the immune system and improve cancer patient outcomes.

IND Approvals

A phase Ib/II Investigational New Drug, or IND, application for advanced cancers, that incorporates a novel cryopreserved haNK product as the backbone of a multi-agent tumor and immune conditioning regimen known as the NCV regimen, received approval from the U.S. Food and Drug Administration in October 2017 (NCT03329248) to proceed. Since then, twelve additional INDs in various cancer indications using cryopreserved haNK product as the backbone of the NCV regimen, received approval from the FDA.

European Approval

During the third quarter of 2017, Chemotherapeutisches Forschungsinstitut Georg-Speyer-Haus, or GSH, reached the first regulatory milestone of a receipt of the first Institutional Review Board, or IRB, approval for the phase I glioblastoma study, and has since dosed their first patient.

To date, we have generated minimal revenue from non-exclusive license agreements with numerous pharmaceutical and biotechnology companies granting the right to use our cell lines and intellectual property for non-clinical use. As described below, on June 9, 2015, we spun out these non-exclusive license agreements for non-clinical uses to Brink Biologics, Inc. (Brink Biologics) in exchange for all of the issued and outstanding shares of Brink Biologics, which were subsequently distributed by a dividend to our stockholders. We have not generated any revenue from product sales. We have incurred net losses in each year since our inception and, as of December 31, 2017, we had an

accumulated deficit of approximately $498.7 million. Our net losses were approximately $96.4 million, $120.8 million and $236.9 million for the years ended December 31, 2017, 2016 and 2015, respectively. Substantially all of our net losses resulted from stock-based compensation expense and costs incurred in connection with our research and development programs and from selling, general and administrative costs associated with our operations.

As of December 31, 2017, we had 139 employees and currently, we have 152 employees. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future, which may fluctuate significantly from quarter-to-quarter and year-to-year. We anticipate that our expenses will increase substantially as we:

- continue research and development, including preclinical and clinical development of our existing product candidates;
- potentially seek regulatory approval for our product candidates;
- seek to discover and develop additional product candidates;

- establish a commercialization infrastructure and scale up our manufacturing and distribution capabilities to commercialize any of our product candidates for which we may obtain regulatory approval;
- seek to comply with regulatory standards and laws;
- maintain, leverage and expand our intellectual property portfolio;
- hire clinical, manufacturing, scientific and other personnel to support our product candidates development and future commercialization efforts;
- add operational, financial and management information systems and personnel; and
- incur additional legal, accounting and other expenses in operating as a public company.

We do not expect to generate any revenue from product sales unless and until we successfully complete development and obtain marketing approval for one or more of our product candidates, which we do not expect to happen for at least the next several years, if ever. Until such time that we can generate substantial revenue from product sales, if ever, we expect to finance our operating activities through a combination of equity offerings, debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all, which would have a negative impact on our financial condition and could force us to delay, limit, reduce or terminate our research and development programs or commercialization efforts. Failure to receive additional funding could cause us to cease operations, in part or in full.

Cost Method Investment

In March 2017, we participated in a Series B convertible preferred stock financing and invested $8.5 million in Viracta Therapeutics, Inc., or Viracta, a clinical stage drug development company. Our Chairman and CEO is also the Vice Chairman of Viracta. We did not exercise the option to purchase up to an additional $8.5 million worth of shares of the Series B convertible preferred stock by the September 30, 2017 expiration date. In May 2017, we executed an exclusive worldwide license with Viracta to develop and commercialize Viracta's proprietary histone deacetylase inhibitor drug candidate for use in combination with NK cell therapy and possibly additional therapies.

Based on the level of equity investment at risk, Viracta is not a Variable Interest Entity, or VIE. We are not consolidating Viracta, but are accounting for this investment using the cost method because the preferred stock is not considered in-substance common stock and the preferred stock does not have a readily determinable fair value. As of December 31, 2017, we did not estimate the fair value of this cost method investment as there were no events or changes in circumstances that may have had a significant adverse effect on the fair value of the investment. The cost of the investment is recorded in cost method investment on the consolidated balance sheet as of December 31, 2017.

Collaboration Agreements

We anticipate that strategic collaborations will become an integral part of our operations, providing opportunities to leverage our partners' expertise and capabilities to further expand the potential of our technologies and product candidates. We believe we are well positioned to become a leader in cell-based immunotherapy due to our broad and vertically integrated platform and through complementary strategic partnerships.

In addition to the collaboration and license agreements discussed below, we may enter into an agreement relating to an IL-15 superagonist product developed by an affiliate, and we are also pursuing supply arrangements for various investigational agents controlled by affiliates and third parties to be used in our clinical trials. These collaboration agreements do not typically specify how sales will be apportioned between the parties upon successful commercialization of the product. As a result, we cannot guarantee that we will receive a percentage of the revenue that is at least proportional to the costs that we will incur in commercializing the product candidate. Furthermore, if Dr. Soon-Shiong was to cease his affiliation with us or with NantWorks LLC, or NantWorks, these entities may be unwilling to continue these relationships with us on commercially reasonable terms, or at all and as a result may impede our ability to control the supply chain for our combination therapies.

Altor BioScience Corporation. In August 2016, we entered into an exclusive Co-Development Agreement, or the Co-Development Agreement, with Altor Bio Science Corporation, or Altor. Our Chairman and CEO is also the Chairman of Altor and holds a greater than 20% ownership interest therein. Under the Co-Development Agreement, we agreed with Altor to exclusively collaborate on the development of therapeutic applications combining the Company’s proprietary natural killer cells with Altor's ALT-801 and/or ALT-803 products with respect to certain technologies and intellectual property rights as may be agreed between the parties for the purpose of jointly developing therapeutic applications of certain effector cell lines.

We will be the lead developer for each product developed by the parties pursuant to the Co-Development Agreement unless otherwise agreed to under a given project plan. Under the terms of the Co-Development Agreement, both parties will grant a co-exclusive, royalty free, fully paid-up, worldwide license, with the right to sublicense (only to a third-party contractor assisting with research and development activities under this Co-Development Agreement and subject to prior consent, not to be unreasonably withheld), under the intellectual property, or IP, including the parties interest in the joint IP, solely to conduct any development activities agreed to by the steering committee as set forth in any development plan. Unless otherwise mutually agreed by the parties in the development plan for a project, we shall be responsible for all costs and expenses incurred by either party related to conducting clinical trials and other activities under each development program, including costs associated with patient enrollment, materials and supplies, third-party staffing, and regulatory filings.

Each company will own an undivided interest in and to all rights, title and interest in and to the joint product rights. The Co-Development Agreement expires upon the fifth anniversary of the effective date. We dosed several patients with ALT-803 in our phase II Merkel cell carcinoma and our phase Ib/II pancreatic cancer trials under the Co-Development Agreement during the year ended December 31, 2017.

Sorrento Therapeutics. In December 2014, we entered into a Joint Development and License Agreement with Sorrento Therapeutics, Inc., or Sorrento. The agreement expired in December 2017. Since no joint product candidates were identified during the exclusive term, Sorrento has no rights to use our NK cells or other technologies or intellectual property rights or to begin related research, development or commercialization activities and we are free to pursue, and are actively pursuing, research, development and commercialization activities with antibodies that may bind to various targets, including PDL1, CD19 and FLT3.

Licensing Agreements

Viracta License Agreement

In May 2017, we entered into an agreement with Viracta to grant us exclusive world-wide rights to Viracta's phase II drug candidate, VRx-3996, for use in combination with our platform of natural killer cell therapies. Our Chairman and CEO is also the Vice Chairman of Viracta. In consideration for the license, we are obligated to pay to Viracta (i) mid-single digit percentage royalties of net sales of licensed products for therapeutic use; and (ii) milestone payments ranging from $10.0 million to $25.0 million for various regulatory approvals and cumulative net sales levels. We may terminate the agreement, in our sole discretion, in whole or on a product by product and/or country by country basis, at any time upon 90 days' prior written notice. In addition, either party may terminate the agreement in the event of a material breach or for bankruptcy of the other party.

GSH and DRK-Blutspendedienst Baden-Wurttemberg-Hessen gGmbH, or BSD, License Agreement

In August 2015, we entered into a license agreement with GSH and BSD under which we were granted an exclusive license to certain GSH-BSD patents, materials and know-how that specifically targets ErbB2 expressing cancers. In addition, GSH granted us an exclusive license to certain GSH only technology and materials. In consideration for the licenses, we agreed to pay initial and annual licensing fees, regulatory and commercial milestones and low single-digit percentage royalties on net sales of licensed products. The royalty term shall continue in a particular country until the later of (i) the expiration of the valid patent claims in such country, or (ii) a specified period of time after the first commercial sale of licensed product in such country. The license agreement shall continue until no further payments are due at which time the licenses and rights will continue on a non-exclusive, royalty-free basis. The license agreement can be terminated earlier: (i) for material breach by either party after 60 days cure period, (ii) if we declare bankruptcy or insolvency, (iii) by us at our sole discretion upon 60 days prior written notice. We paid and expensed $1.1 million for the initial license fees in 2015 under the license, which was included in research and development expense on the consolidated statement of operations for year ended December 31, 2015. Annual license fees under the agreement begin in 2018.

During the third quarter of 2017, GSH reached the first regulatory milestone of a receipt of the first Institutional Review Board, or IRB, approval for the phase I glioblastoma study. We expensed $0.9 million for the first milestone payment under the agreement, which is included in research and development expenses on the consolidated statements of operations for the year ended December 31, 2017.

Agreements with Related Parties

In June 2015, we spun out Brink Biologics, Inc., or Brink Biologics, and Coneksis, Inc., or Coneksis. Our Chairman and CEO has a controlling interest in Brink Biologics and Coneksis. For a description of each of these transactions see the disclosure under “Spin-Out of Testing and Diagnostic Products and Services” and “Spin-Out of Veterinary Oncology Rights” below.

Our Chairman and CEO, Dr. Soon-Shiong, founded and has a controlling interest in NantWorks, which is a collection of multiple companies in the healthcare and technology space. We have entered into arrangements with certain affiliates of NantWorks described below that, taken together, we expect will facilitate the development of new genetically modified NK cells for our product pipeline.

John Lee, M.D. and Leonard Sender, M.D., Inc., a professional medical corporation, dba Chan Soon-Shiong Institutes for Medicine, or CSSIM

In 2017, we entered into multiple agreements with John Lee, M.D. and Leonard Sender, M.D., Inc., a professional medical corporation, dba Chan Soon-Shiong Institutes for Medicine, or CSSIM, in El Segundo, California, to conduct various clinical trials. CSSIM is a related party as it is owned by two of our officers and NantWorks provides administrative services to CSSIM. One of our officers is the principal investigator for the trials on behalf of CSSIM. During the year ended December 31, 2017, expense of $0.8 million has been recognized in research and development expense on the consolidated statement of operations.

Tensorcom, Inc.

In April 2017, we entered into a sublease agreement with Tensorcom, Inc., or Tensorcom, related to our San Diego, California, research and development laboratory and office space, with an initial lease from May 1, 2017 through April 30, 2018. Our Chairman and CEO indirectly owns all of the outstanding equity of Tensorcom. The sublease agreement converts to a month-to-month lease after the initial lease term, not to exceed the expiration of the lease agreement between us and our third party landlord. After the initial term, the sublease agreement can be terminated by either party by providing a thirty day written notice. The sublease includes a portion of the premises consisting of approximately 6,557 rentable square feet of space. The monthly base rent is $25,000 per month, with an annual 3% increase. For the year ended December 31, 2017, we recognized $0.2 million in other income on the consolidated statement of operations under the sublease agreement.

VivaBioCell S.p.A.

In February 2017, we entered into a research grant agreement with VivaBioCell S.p.A., or VBC, an affiliated company of NantWorks, under which VBC will conduct research and development activities related to our NK cell lines using VBC’s proprietary technology. We paid $0.6 million to VBC, which is recorded in prepaid expenses and other current assets on the consolidated balance sheet, and we expect to benefit from the research and development activities over a one year timeframe. For the year ended December 31, 2017, $0.6 million has been recognized in research and development expense on the consolidated statement of operations and prepaid expenses and other current assets on the consolidated balance sheet has been reduced by that amount.

605 Doug St. LLC

In September 2016, we entered into a lease agreement with 605 Doug St, LLC, an entity owned by our Chairman and CEO, for approximately 24,250 square feet in El Segundo, California, which is to be converted to a research and development laboratory and a current Good Manufacturing Practices, or cGMP, laboratory. The lease runs from July 2016 through July 2023. We have the option to extend the lease for an additional three year term through July 2026. The monthly rent is $0.1 million with annual increases of 3% beginning in July 2017. During the construction period, we record the rent payments as (1) a reduction of the build-to-suit lease liability; (2) deferred rent; and (3) rent expense on the imputed cost to lease the underlying land of the facility, which is considered an operating lease. For the years ended December 31, 2017 and 2016, we recorded rent expense of $0.2 million and $0.1 million, respectively, which is reflected in research and development expense on the consolidated statement of operations.

We are responsible for costs to build out the laboratory and have incurred costs of approximately $30.0 million as of December 31, 2017, which is reflected in construction in progress on the consolidated balance sheet. Additionally, in

order for the facility to meet our research and development and cGMP laboratory specifications, we are making certain structural changes as part of the conversion to laboratory space. As a result of these changes, we have concluded that we are the "deemed owner" of the building (for accounting purposes only) during the construction period. Accordingly, we recorded a non-cash build-to-suit lease asset of $5.1 million, representing our estimate of the fair market value of the building, and a corresponding construction build-to-suit lease liability, which is recorded as a component of other current and non-current liabilities on the consolidated balance sheet as of December 31, 2017.

Altor

In August 2016, we entered into a Co-Development Agreement with Altor as further described above and under Collaborative Arrangement - Exclusive Co-Development Agreement in Note 7 of the "Notes to Consolidated Financial Statements." Our Chairman and CEO is also the Chairman of Altor and holds a greater than 20% ownership interest therein. Through December 31, 2017, no charges for supplies or milestones by Altor have been incurred in association with the above trial.

NantBio, Inc.

In January 2018, we entered into a laboratory services agreement with NantBio, Inc., or NantBio, a NantWorks company. The agreement, effective December 1, 2017, includes a sublease of approximately 1,965 square feet of laboratory and office space at our San Diego, California, research facility. The term of the sublease is 24 months, but can be terminated by either party with 30 days prior written notice. The sublease converts to a month-to-month lease after the initial term, not to exceed the expiration of the lease agreement between us and the landlord. The monthly sublease and service fee of $10,000 is subject to an annual 3% increase on the agreement anniversary date. We recognized $10,000 in other income on the consolidated statement of operations for the year ended December 31, 2017.

In March 2016, NantBio and the National Cancer Institute entered into a cooperative research and development agreement. The agreement covers NantBio and its affiliates, including NantKwest. Under the agreement, we are collaborating on the preclinical and clinical development of proprietary recombinant NK cells and monoclonal antibodies in monotherapy and in combination immunotherapies. We expect to benefit from the preclinical and clinical research conducted during the first and second year under this agreement and are providing the first and second year of funding under the five-year agreement. In both April 2016 and April 2017, we paid $0.6 million to the National Cancer Institute as a prepayment for the first and second year of funding. We recognize research and development expense ratably over a 12-month period and recorded $0.6 million and $0.5 million, respectively, for the years ended December 31, 2017 and 2016.

NantWorks

In November 2015, we entered into a shared services agreement with NantWorks under which NantWorks provides corporate, general and administrative, manufacturing strategy, research and development, regulatory and clinical trial strategy, and other support services to us, effective August 1, 2015. In June 2016, we entered into an amended shared services agreement with NantWorks to allow for the provision of such support services by us to NantWorks and/or any of its affiliates. We will continue to be charged for the services at cost plus reasonable allocations for indirect costs that relate to the employees providing the services and will charge out our services in the same manner. For the years ended December 31, 2017, 2016 and 2015, the Company recorded $3.6 million, $3.9 million and $1.8 million, respectively, to selling, general and administrative, and $3.2 million, $2.1 million and $0.3 million, respectively, in research and development expense under this arrangement on the consolidated statement of operations. These amounts exclude certain general and administrative expenses provided by third party vendors directly for our benefit, which have been reimbursed to NantWorks based on those vendors' invoiced amounts without markup by NantWorks. For the years ended December 31, 2017 and 2016, the Company recorded expense reimbursements of $0.4 million and $0.1 million, respectively, to selling, general and administrative expense and $1.0 million and $0.2 million, respectively, to research and development expense. All amounts are recorded on the consolidated statement of operations under this arrangement.

In November 2015, we entered into a facility license agreement with NantWorks, effective in May 2015, for approximately 9,500 square feet of office space in Culver City, California, which has been converted to a research and development laboratory and a cGMP laboratory. The term of the license extends through December 2020. We have the option to extend the license through December 2023. The monthly license fee is $47,000 with annual increases of 3% beginning in January 2017. We record the rent payments as (1) a reduction of the financing obligation; (2) imputed interest expense; and (3) rent expense on the imputed cost to lease the underlying land of the facility, which is considered an operating lease. For each of the years ended December 31, 2017, 2016 and 2015, we recorded rent expense of $0.2 million, included in research and development on the consolidated statement of operations.

Under the facility license agreement with NantWorks, we were responsible for costs to build out the laboratory and incurred costs of $3.5 million, which are reflected as property, plant and equipment, net. Additionally, in order for the facility to meet our research and development and cGMP laboratory specifications, we have made structural changes

as part of the conversion from office to laboratory space, and as a result, have concluded that we are the “deemed owner” of the building (for accounting purposes only) during the construction period.

Upon completion of construction of this building in August 2016, we evaluated the de-recognition of the asset and liability under the provisions of ASC 840-40 Leases – Sale-Leaseback Transactions. We determined that the lease does not meet the criteria for sale-leaseback accounting treatment, due to the continuing involvement in the project resulting from the significant collateral we provided to the landlord in the form of building improvements. As a result, the building is being accounted for as a financing obligation. The underlying assets of $4.3 million are depreciated over the building’s estimated useful life, which is 39 years. At the conclusion of the license term, we will de-recognize both the net book values of the asset and financing obligation.

NantOmics, LLC

In June 2015, we entered into an agreement with NantOmics, LLC, or NantOmics, to obtain genomic sequencing and proteomic analysis services, as well as related data management and bioinformatics services, exclusively from NantOmics. We will have rights to use the data and results generated from NantOmics' services in connection with the performance of the particular oncology trial with respect to which the services were performed, but NantOmics will own the data and results, as well as any other intellectual property it creates in performing these services for us. We are obligated to pay NantOmics a fixed, per sample fee, determined based on the type of services being provided. The agreement has an initial term of five years and renews automatically for successive one year periods, unless terminated by us or NantOmics. Either company has the right to terminate the agreement for convenience on 90 days prior written notice, or in the event there is a material, uncured breach of the agreement by the other party. For the years ended December 31, 2017, 2016 and 2015, under this arrangement we recorded operating expense of $0.1 million, $0.2 million and $0.1 million, respectively, to research and development on the consolidated statement of operations.

NanoCav, LLC

In June 2015, we entered into an agreement with NanoCav, LLC, or NanoCav, a related party, pursuant to which we obtained access to NanoCav's virus-free cell transfection technologies on a non-exclusive basis. Under the agreement, NanoCav will conduct certain, mutually-agreed feasibility studies, on a fee for service basis, to evaluate the use of its cell transfection technologies with our aNK platform products and non-proprietary NK cells. We may elect to obtain NanoCav's cell transfection equipment, and rights to its associated protocols and other intellectual property, for use only for pre-clinical research, or also for use in clinical and commercial applications. If we choose to qualify the equipment and technologies for cGMP use with our products, we are obligated to pay NanoCav an annual license fee, which is determined based upon whether we elect to use NanoCav's technologies for pre-clinical purposes only, or also for clinical and commercial purposes. In addition, if we use the equipment for clinical and commercial purposes, we are obligated to pay an equipment fee on a cost-plus basis. We are also obligated to purchase any consumables we require to use with the NanoCav technologies from NanoCav, and to pay for those consumables on a cost-plus basis. In 2015, we made a feasibility study retainer payment of $45,000. The agreement has an initial term of five years and renews automatically for successive one year periods, unless terminated. We have the right to terminate the agreement for convenience on 90 days prior written notice, and both NanoCav and we may terminate if there is a material, uncured breach of the agreement by the other party. For the years ended December 31, 2017, 2016 and 2015, under this arrangement we recorded operating expense of $0, $0.1 million and $0, respectively, to research and development on the consolidated statement of operations.

NantCell

In June 2015, we entered into a supply agreement with NantCell, Inc., or NantCell, pursuant to which we have the right to purchase NantCell's proprietary bioreactors, made according to specifications mutually agreed to with NantCell. We also has the right to purchase reagents and consumables associated with such equipment from NantCell. When an upfront payment is made, it is included in prepaid expenses on the consolidated balance sheets until the product is received. The agreement has an initial term of five years and renews automatically for successive one year periods unless terminated earlier.

During the year ended December 31, 2017, the Company purchased bioreactors resulting in $0.3 million in capitalized equipment in the consolidated balance sheet. During the years ended December 31, 2017, 2016 and 2015, the Company recorded research and development expense of $0.3 million, $0.2 million and $0, respectively, on the consolidated statement of operations.

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Spin-Out of Testing and Diagnostic Products and Services

On June 9, 2015, we spun out our business relating to testing and diagnostic products and services to Brink Biologics in exchange for all of the issued and outstanding shares of Brink Biologics. We subsequently distributed the shares of Brink Biologics by a dividend to our stockholders of record on June 9, 2015, on a pro rata basis. Under the spin-out arrangement, we transferred to Brink Biologics all of our existing, revenue-earning, non-exclusive license agreements that allow third parties to use our cell lines and intellectual property for non-clinical laboratory testing, and also transferred or licensed to Brink Biologics our other assets pertaining to testing and diagnostics products and services. Our board of directors determined that our strategic focus is to utilize our resources to pursue the potential treatment of cancer, infectious diseases, and inflammatory diseases, rather than to utilize our resources and intellectual property to focus on non-clinical laboratory testing for minimal revenue opportunities as compared to the potential market opportunity that may exist for our therapeutic focus. We granted to Brink Biologics worldwide, exclusive licenses, for use only in the field of in vitro and in vivo testing and diagnostic products and services and under certain cell lines, trademarks, know-how, and patents, including the intellectual property rights licensed to us under our license agreement with Fox Chase Cancer Center. Brink Biologics is restricted in its ability to modify the licensed cell lines, and we will have at least joint ownership of any such modifications and the ability to use those modifications outside Brink Biologics' field. We also have a non-exclusive license to any results and data arising from Brink Biologics' use of our cell lines and intellectual property for our use for internal research purposes and outside of Brink Biologics' field. In consideration for the license grants, Brink Biologics is obligated to pay us a low single-digit royalty on amounts received for the sale of licensed products and services, as well as a low single-digit percentage share of other revenue received by Brink Biologics from the grant of sublicenses under our rights.

For the years ended December 31, 2017, 2016 and 2015, we recorded $25,000, $21,000 and $11,000, respectively, in revenue for royalties. Brink Biologics has the right to terminate the license agreement for convenience. We have the right to terminate the license agreement if Brink Biologics challenges any of our patents or the patents licensed to us by Fox Chase Cancer Center. Either party has the right to terminate the license agreement if the other party is dissolved or is declared bankrupt, or remains in breach of any material obligation following a sixty-day cure period to remedy the breach. Also, as part of the spin-out arrangement, we have agreed to provide certain services to Brink Biologics for a transitional period on a fee-for-service basis. For the years ended December 31, 2017, 2016 and 2015, we recorded service fees from Brink Biologics of $0.1 million, $0.1 million and $22,000, respectively, which are recorded in other income on our consolidated statements of operations. We further determined that we have a variable interest in Brink Biologics through our royalty agreement with Brink Biologics. However, we are not the primary beneficiary, and as such, do not consolidate the entity.

Spin-Out of Veterinary Oncology Rights

On June 9, 2015, we spun out our business relating to veterinary oncology to Coneksis in exchange for all of the issued and outstanding shares of Coneksis. We subsequently distributed the shares of Coneksis by a dividend to our stockholders of record on June 9, 2015, on a pro rata basis. In connection with the spin-out arrangement, we granted to Coneksis worldwide, exclusive licenses, for use only in the field of veterinary medical research and therapeutics, under certain cell lines, trademarks, know-how, and patents, including the intellectual property rights licensed to us under our license agreement with Fox Chase Cancer Center. Like Brink Biologics, Coneksis is restricted in its ability to modify the licensed cell lines, and we will have at least joint ownership of any such modifications and the ability to use those modifications outside Coneksis' field. We also have a non-exclusive license to any results and data arising from Coneksis' use of our cell lines and intellectual property for our use for internal research purposes and outside of Coneksis' field. In consideration for the license grants, Coneksis is obligated to pay us a low single-digit royalty on amounts received for the sale of licensed products and services, as well as a low single-digit percentage share of other revenue received by Coneksis from the grant of sublicenses under our rights. Coneksis has the right to terminate the license agreement for convenience. We have the right to terminate the license agreement if Coneksis challenges any of our patents or the patents licensed to us by Fox Chase Cancer Center. We and Coneksis each have the right to terminate the license agreement if the other party is dissolved or is declared bankrupt, or remains in breach of any

material obligation following a sixty-day cure period to remedy the breach. Finally, as part of the spin-out arrangement, we have agreed to provide certain services to Coneksis for a transitional period on a fee-for-service basis.

For the years ended December 31, 2017, 2016 and 2015, we recorded $40,000, $19,000 and $6,000, respectively, for service fees from Coneksis, which are recorded in other income on our consolidated statements of operations. We further determined that we have a variable interest in Coneksis through our royalty agreement with Coneksis. However, we are not the primary beneficiary, and as such, do not consolidate the entity.

Inex Bio Acquisition

In April 2012, we made a strategic decision to enter into a License Agreement, or the Inex License Agreement, with Inex Bio, Inc. or Inex Bio, a Republic of Korea corporation. Under the Inex License Agreement, we provided Inex Bio with an exclusive license to our technology to be used in products only in certain Asian countries. In exchange for the exclusive license, we received a $0.3 million up-front license fee. In addition, we were entitled to receive milestone payments of up to $0.8 million based upon the completion of certain clinical trials and a 5% royalty on the net sales of applicable products using our aNK cells. No milestone payments or royalties have ever been due or received under this agreement.

In May 2012, we acquired 57,000 shares of Inex Bio for $0.2 million, which represented 22.2% of the outstanding shares and 17.4% of the fully-diluted shares of Inex Bio. At that time, Inex Bio had only one other stockholder and one option holder.

In February 2015, following Dr. Soon-Shiong and Dr. Henry Ji, one of our former directors, joining us, we determined that reacquiring the rights licensed in certain Asian countries was of strategic importance to our future potential commercial strategy. Drs. Soon-Shiong and Ji helped facilitate our reacquisition of these rights through the acquisition of Inex Bio, using their relationships with the other Inex Bio stockholders. Drs. Soon-Shiong and Ji facilitated the acquisition through the formation of Inex Bio Holdings, LLC, or Inex Bio Holdings, which purchased shares of Inex Bio from third party stockholders. Cambridge Equities, LP, an entity of which Dr. Soon-Shiong is the sole member of its general partner, and Eragon Ventures, LLC, an entity of which Dr. Ji was the managing member, each owned fifty percent (50%) of Inex Bio Holdings.

In February and March 2015, Inex Bio Holdings paid $1.1 million in cash to the third party stockholders to acquire a 67.3% interest in Inex Bio. Following this transaction, we owned a 22.2% interest in Inex Bio, Inex Bio Holdings owned a 67.3% interest in Inex Bio and the third party stockholders held the remainder of the Inex Bio shares. We believed that it was in our best interest for Inex Bio Holdings to acquire the shares directly from the third party stockholders of Inex Bio because of Dr. Soon-Shiong’s and Dr. Ji’s relationships with the stockholders and our belief that this would be the quickest manner to effect the acquisition and at the lowest price.

On March 30, 2015, we entered into a Stock Purchase Agreement with Inex Bio Holdings and certain other parties, or the purchase agreement, pursuant to which we acquired all the remaining outstanding shares of Inex Bio not previously owned by us for cash consideration of $8.0 million and the issuance of a warrant to purchase 3,202,593 shares of our Class A common stock at an exercise price of $2.00 per share. We paid (1) $1.5 million in cash and warrants to purchase 593,072 shares of our Class A common stock valued at approximately $5.2 million to the third party stockholders; and (2) $6.5 million of cash and warrants to purchase 2,609,520 shares of our Class A common stock valued at $22.7 million to Inex Bio Holdings. The purpose of providing the warrants was primarily to avoid having to use additional cash consideration for the acquisition. In addition, the subsequent exercise of the warrants by Inex Bio Holdings and other former shareholders of Inex Bio provided us with additional cash to fund our operations. Subsequent to the closing of the transaction, Inex Bio Holdings exercised the warrant we issued in connection with the transaction for 2,609,520 shares of our common stock for aggregate cash consideration to us of $5.2 million.

During the second quarter of 2015, due to the price at which our common stock sold in a series of private placement transactions, we retroactively reassessed the estimated fair value per share of our common stock for financial reporting purposes. As a result of our reassessment, we determined that, solely for financial reporting purposes, the fair value of our common stock was higher than the fair market values determined in good faith by our board of directors for each of the option grant dates from and after January 2015. The exercise price of $2.00 per share for the warrants issued to Inex Bio Holdings in March 2015 was based upon the fair market value determined in good faith by our board of directors. As a result of the retroactive reassessment in the second quarter of 2015, the issuance of the warrants resulted in compensation expense to Dr. Soon-Shiong and to Dr. Ji of $22.7 million.

Components of our Results of Operations

Revenue

To date, we have derived substantially all of our revenue from non-exclusive license agreements with numerous pharmaceutical and biotechnology companies granting them the right to use our cell lines and intellectual property for non-clinical use. These agreements generally include upfront fees and annual research license fees for such use, as well as commercial license fees for sales of our licensee's products developed or manufactured using our intellectual property and cell lines. Our license agreements may also include milestone payments, although to date, we have not generated any revenue from milestone payments. We recognize revenue when there is persuasive evidence of an arrangement, delivery has occurred or we have provided the service, the fees are fixed or determinable, and collectability is reasonably assured. Our revenue from non-clinical license agreements is nominal. In the future, we may generate revenue from license agreements entered into for therapeutic uses. To date, we have not generated any revenue from product sales. If we fail to complete the development of our product candidates in a timely manner or fail to obtain regulatory approval for them, we may never be able to generate substantial future revenue.

Operating Expenses

We classify our operating expenses into research and development and selling, general and administrative expenses. Personnel costs including salaries, benefits, bonuses and specifically stock-based compensation expense comprise a significant component of our research and development and selling, general and administrative expense categories. We allocate expenses associated with our facilities and information technology costs between these two categories based on the nature of each cost.

Research and Development

Research and development expense consists of expenses incurred while performing research and development activities to discover and develop our product candidates. This includes conducting preclinical studies and clinical trials, manufacturing development efforts and activities related to regulatory filings for product candidates. We recognize research and development expenses as they are incurred. Our research and development expense primarily consists of:

- clinical trial and regulatory-related costs;
- expenses incurred under agreements with investigative sites and consultants that conduct our clinical trials;
- manufacturing and testing costs and related supplies and materials;
- employee-related expenses, including salaries, benefits, travel and stock-based compensation; and
- facility expenses dedicated to research and development.

We typically use our employee, consultant and infrastructure resources across our development programs. We track outsourced development costs by product candidate or development program, but we do not allocate personnel costs, other internal costs or external consultant costs to specific product candidates or development programs.

Substantially all of our research and development expenses to date have been incurred in connection with our product candidates. We expect our research and development expenses to increase significantly for the foreseeable future as we advance an increased number of our product candidates through clinical development, including the conduct of our planned clinical trials. The process of conducting clinical trials necessary to obtain regulatory approval is costly and time consuming. The successful development of product candidates is highly uncertain. At this time, we cannot reasonably estimate the nature, timing or costs required to complete the remaining development of any product candidates. This is due to the numerous risks and uncertainties associated with the development of product candidates.

The costs of clinical trials may vary significantly over the life of a project owing to, but not limited to, the following:

- per patient trial costs;
- the number of sites included in the clinical trials;
- the countries in which the clinical trials are conducted;
- the length of time required to enroll eligible patients;
- the number of patients that participate in the clinical trials;
- the number of doses that patients receive;
- the cost of comparative agents used in clinical trials;
- 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 candidate.

We do not expect any of our product candidates to be commercially available for at least the next several years, if ever.

Selling, General and Administrative

Selling, general and administrative expense consists primarily of salaries and personnel-related costs, including employee benefits and any stock-based compensation, for employees performing functions other than research and development. This includes personnel in executive, finance, human resources and administrative support functions. Other selling, general and administrative expenses include facility-related costs not otherwise allocated to research and development expense, professional fees for auditing, tax and legal services, advertising costs, expenses associated with obtaining and maintaining patents, consulting costs, royalties and licensing costs, and costs of our information systems.

Although our selling, general and administrative costs declined during the year ended December 31, 2017 as compared to the year ended December 31, 2016, we expect that our selling, general and administrative expenses will increase for the foreseeable future as we expand operations, internalize the manufacturing of our product candidates (including costs related to building out a state-of-the-art manufacturing facility, as well as hiring additional employees to support our manufacturing and processing department), and operate as a public reporting company (including increased fees for outside consultants, lawyers and accountants, as well as increased directors' and officers' liability insurance premiums). We have incurred and expect that we will continue to incur in the future additional costs associated with operating as a public company, including costs to comply with stock exchange listing and SEC requirements, corporate governance, internal controls, investor relations, disclosure, and similar requirements applicable to public companies. Additionally, if and when we believe that a regulatory approval of a product candidate appears likely, we expect to incur significant increases in our selling, general and administrative expenses relating to the sales and marketing of the approved product candidate.

Other Income (Expense)

Other income (expense) consists primarily of income from our investments in marketable securities, sublease rental income, interest expense from the accretion of our capital lease and financing obligations, foreign currency income (expense), and non-cash costs related to fair value adjustments to our derivative warrant liability.

In 2010, we issued, in conjunction with a termination and release agreement, a warrant to purchase 114,822 shares of Class A common stock. We accounted for the warrant as a derivative liability, which was adjusted to fair value each reporting period. The warrant was exercised in April 2015 and the derivative liability was reclassified to additional paid-in capital.

Income Tax

Income tax expense consists of U.S. federal and state income taxes. To date, we have not been required to pay U.S. federal income taxes because of our current and accumulated net operating losses. Our income tax expense to date primarily relates to minimum income taxes in the State of California. Our tax benefit relates to the amortization of deferred tax liabilities at our Korean subsidiary.

Results of Operations

Comparison of the years ended December 31, 2017, 2016 and 2015 (in thousands)

	For the Year Ended December 31,			Change	
				2017 vs.	2016 vs.
	2017	2016	2015	2016	2015
Revenue	$45	$44	$236	$1	$(192)

Operating expenses:					
Research and development	42,044	29,153	11,434	12,891	17,719
Selling, general and administrative	57,121	95,391	227,678	(38,270)	(132,287)
Total operating expenses	99,165	124,544	239,112	(25,379)	(114,568)
Loss from operations	(99,120)	(124,500)	(238,876)	25,380	114,376
Other income (expense):					
Investment income, net	2,665	3,097	2,988	(432)	109
Change in fair value of warrant liability	—	—	(1,366)	—	1,366
Interest expense	(618)	(66)	—	(552)	(66)
Other income	157	88	77	69	11
Total other income	2,204	3,119	1,699	(915)	1,420
Loss before income taxes	(96,916)	(121,381)	(237,177)	24,465	115,796
Income tax benefit	(493)	(572)	(301)	79	(271)
Net loss	$(96,423)	$(120,809)	$(236,876)	$24,386	$116,067

Revenue

The change in revenue was minimal during the year ended December 31, 2017 as compared to the year ended December 31, 2016 and consisted of license fees and royalties.

Revenue decreased $0.2 million during the year ended December 31, 2016 as compared to the year ended December 31, 2015. The decrease was primarily attributable to the transfer to Brink Biologics in June 2015 of the majority of our then-existing revenue-earning, non-exclusive license agreements that allow third parties to use our cell line and intellectual property for non-clinical laboratory testing as discussed above under the heading “Spin-Out of Testing and Diagnostic Products and Services” above. As a result of this spin-out, we no longer receive revenue from these agreements.

Research and Development

Research and development expense increased $12.9 million during the year ended December 31, 2017 as compared to the year ended December 31, 2016. The increase was primarily attributable to increases of $7.2 million for laboratory, pre-clinical and clinical trial costs driven by increased research and cGMP manufacturing activities, $5.3 million in compensation and related expenses driven by increased staff and fees for services rendered under our shared services agreement with NantWorks, and $3.2 million for laboratory and manufacturing facilities and depreciation expense, partially offset by decreases of $2.2 million for clinical and regulatory consultant costs due to bringing these functions in-house and $0.7 million in stock compensation expense, primarily related to forfeitures. We expect our research and development expenses to increase significantly for the foreseeable future as we advance an increased number of our product candidates through clinical development and conduct our planned clinical trials.

Research and development expense increased $17.7 million during the year ended December 31, 2016 as compared to the year ended December 31, 2015. The increase was primarily attributable to a $7.7 million increase in compensation and related expenses driven by increased staff and fees for services rendered under our shared services agreement with NantWorks, $4.1 million in laboratory, preclinical, and clinical trial expenses, $2.8 million for laboratory and manufacturing facilities and depreciation expense, $2.3 million of clinical and regulatory consultant costs, and $1.2 million for increased amortization on the technology license acquired on March 30, 2015 in connection with our acquisition of the remaining capital stock of Inex Bio, partially offset by a decrease of $0.4 million in stock compensation expense.

Selling, General and Administrative

Selling, general and administrative expense decreased $38.3 million during the year ended December 31, 2017 as compared to the year ended December 31, 2016. The decrease was primarily attributable to a decrease of $36.1 million in stock compensation expense mainly driven by decreases of $18.9 million of warrant expense due to the timing of performance milestones being achieved by our Chairman and CEO, $10.3 million related to option awards that were fully vested in January and February 2017, $7.0 million related to initial public offering equity awards granted to our Chairman and CEO and our President and Chief Administrative Officer, or CAO, that were fully vested in July 2016, and $0.2 million for non-employee RSU terminations, partially offset by an increase of $0.4 million primarily driven by new grants in 2017.

In addition, selling, general and administrative expense decreased $1.9 million in professional and consulting fees for the ramp up in the first quarter of 2016 of accounting, tax, and Sarbanes-Oxley compliance related services in connection with operating as a public company and increased staff in relation to consultants and $0.6 million in contributions made, partially offset by an increase of $0.4 million in legal fees mainly due to shareholder litigation costs and the USPTO appeal.

Selling, general and administrative expense decreased $132.3 million during the year ended December 31, 2016 as compared to the year ended December 31, 2015. The decrease was primarily attributable to a $137.0 million decrease in stock compensation expense, of which $91.4 million is related to service and performance based criteria applicable to warrants granted to our Chairman and CEO pursuant to a Common Stock Purchase Warrant Agreement, or the Warrant Agreement. The stock compensation expense related to the Warrant Agreement includes a $109.4 million reduction of expense related to the achievement of performance milestones, which triggered the vesting of 8,331,750 warrant shares in 2015 versus 370,300 warrant shares in 2016, partially offset by an increase of $10.4 million related to two other performance milestones that were deemed probable of achievement in 2016 and a $7.6 million increase related to service-based vesting for a full year in 2016 versus nine months in 2015. In addition to the impact of the Warrant Agreement, the decrease in stock compensation included $22.7 million related to grants to Dr. Soon-Shiong and a former director for their assistance in connection with the asset purchase of Inex Bio in 2015, $20.0 million decrease related to the stock options and restricted stock units, or RSUs, granted in 2015 to Dr. Soon-Shiong and to Dr. Simon, our President and CAO, and $2.9 million decrease related to stock options and RSUs awarded to employees and non-employees.

The decrease in selling, general and administrative expense was also attributable to a $5.4 million decrease in personnel costs related to cash consideration paid to our Chairman and CEO and a former director in association with the acquisition of Inex Bio in 2015. These aforementioned reductions were offset by increases of $4.4 million in professional and consulting fees for accounting and compliance related services in connection with operating as a public company, $4.1 million in compensation expense related to increased staff, and fees for services under our shared services agreement with NantWorks, $0.7 million for investment management fees for twelve months in 2016 versus one month in 2015, $0.7 million for contributions made in 2016, and $0.4 million for increased travel.

Other Income (Expense)

Other income decreased by $0.9 million during the year ended December 31, 2017 as compared to the year ended December 31, 2016 due to $0.5 million in increased interest expense related to our capital lease and financing obligations and a $0.4 million decrease in investment income due to use of our investments for operations.

Other income increased $1.4 million during the year ended December 31, 2016 as compared to the year ended December 31, 2015. The increase was primarily attributable to $1.4 million of other expense related to fair value adjustment on our derivative warrant liability recognized in 2015 and a $0.1 million increase in net investment income related to our investments in marketable securities.

Income Tax Benefit

Income tax benefit decreased by $0.1 million during the year ended December 31, 2017 as compared to the year ended December 31, 2016. The decrease was primarily attributable to income tax benefits related to losses at Inex Bio.

Income tax benefit increased by $0.3 million during the year ended December 31, 2016, as compared to the year ended December 31, 2015. The increase was attributable to income tax benefits related to losses at Inex Bio.

Liquidity and Capital Resources

Sources of Liquidity

As of December 31, 2017, we had cash and cash equivalents of $23.9 million compared to $8.1 million as of December 31, 2016. The increase was mainly attributable to net cash provided by investing activities of $99.6 million, primarily driven by sales and maturities of marketable securities partially offset by the purchase of additional marketable securities driven by reinvestment of excess cash resources and purchases of property, plant and equipment. This increase from investing activities was partially offset by cash used in financing activities of $35.0 million, primarily driven by paying off our capital lease and the repurchase of common stock, and operating activities of $48.8 million.

Investments in marketable securities were $133.9 million as of December 31, 2017, of which $104.3 million were short-term investments as compared to $278.4 million as of December 31, 2016, of which $190.8 million were short-term investments.

Recent Equity Transactions

In November 2015, the board of directors approved a share repurchase program allowing our CEO or our Chief Financial Officer, on behalf of the Company, to repurchase from time to time, in the open market or in privately negotiated transactions, up to $50.0 million of our outstanding shares of common stock, exclusive of any commissions, markups or expenses. The timing and amounts of any purchases will be based on market conditions and other factors, including price, regulatory requirements and other corporate considerations. The program does not require the purchase of any minimum number of shares and may be suspended, modified or discontinued at any time

without prior notice. We expect to finance the purchases with existing cash balances. During the year ended December 31, 2017, an aggregate of 3,633,610 shares were repurchased for $15.2 million including commissions. All repurchases were at the then current market price. For additional information regarding the stock repurchase, see Note 11 of our “Notes to Consolidated Financial Statements.”

From June 10, 2015 through July 8, 2015, we raised aggregate net proceeds of approximately $78.0 million from the sale of common stock in a series of private placement transactions to third parties. On June 18, 2015, we repurchased 249,952 shares of common stock from an employee at $19.20 per share for approximately $4.8 million.

On July 31, 2015, we closed the initial public offering, or IPO, of 9,531,200 shares of common stock in which we raised proceeds of $221.5 million after underwriters’ discounts and commissions and offering expenses. Concurrently with our IPO, we completed a separate private offering of 680,000 shares of common stock in which we raised net proceeds of $17.0 million.

Cash Flows

The following table sets forth our primary sources and uses of cash for the years ended December 31, 2017, 2016 and 2015 (in thousands):

	For the Year Ended December 31,		
	2017	2016	2015
Cash provided by/(used in):			
Operating activities	$(48,780)	$(38,593)	$(25,305)
Investing activities	99,552	(113,672)	(175,224)
Financing activities	(34,983)	(15,560)	317,333
Net increase/(decrease) in cash and cash equivalents	$15,789	$(167,825)	$116,804

Operating Activities

For the year ended December 31, 2017, our net cash used in operating activities of $48.8 million consisted of a net loss of $96.4 million, partially offset by $44.4 million in adjustments for non-cash items, primarily attributable to $37.0 million in stock compensation expense as well as research and development and selling, general and administrative expenses, and $3.2 million of cash provided by net working capital changes. Adjustments for non-cash items primarily consisted of the $37.0 million in stock-based compensation expense, $5.6 million in depreciation and amortization, $1.6 million in amortization of premiums on marketable securities, $0.7 million in non-cash interest related to our marketable securities, and $0.1 million in loss on asset disposals, reduced by $0.5 million of deferred income tax benefit. Changes in net working capital consisted primarily of increases in due to related parties of $1.6 million, deferred rent of $1.2 million, other assets of $0.5 million, accounts payable of $0.2 million, and prepaid and other current assets of $0.2 million, partially offset by a decrease in accrued expenses of $0.3 million. The increase in cash used in operating activities is primarily due to costs incurred in ongoing preclinical and clinical trials, the ramp-up of manufacturing activities, increased personnel, and research and development activities.

For the year ended December 31, 2016, our net cash used in operating activities of $38.6 million consisted of a net loss of $120.8 million, primarily attributable to $73.9 million in stock compensation expense as well as research and development and selling, general and administrative expenses, partially offset by $78.4 million in adjustments for non-cash items and $3.8 million of cash provided by changes in working capital. Adjustments for non-cash items primarily consisted of the $73.9 million in stock-based compensation expense, $3.6 million in depreciation and amortization and $2.2 million in amortization of premiums on marketable securities, reduced by $0.6 million in non-cash interest related to our investment in marketable securities, $0.6 million of deferred income tax benefit, and $0.1 million in gain on the sale of marketable securities. Changes in working capital consisted primarily of increases in accrued expenses and other liabilities of $ 2.1 million, $1.8 million of deferred rent, accounts payable of $0.9 million, due to related parties of $0.4 million, and other assets of $0.2 million, partially offset by an increase of $1.5 million in prepaid expenses and other current assets. The increase in cash used in operating activities is primarily due to costs incurred in ongoing preclinical studies and clinical trials, increased personnel, and research and development activities, as well as increased general and administrative expenses due to added personnel and incremental costs to operate as a public company.

For the year ended December 31, 2015, our net cash used in operating activities of $25.3 million consisted of a net loss of $236.9 million, primarily attributable to $211.2 million in stock compensation expense, $5.4 million cash compensation expense to our CEO and a former director in association with the acquisition of Inex Bio, as well as increases in legal expenses primarily to protect and maintain our patents and spending on research and development efforts. This was partially adjusted by $211.3 million for non-cash items and $0.3 million of cash provided in changes

in working capital. Adjustments for non-cash items primarily consisted of the $211.2 million in stock-based compensation, $1.5 million in depreciation and amortization, and $1.4 million change in fair value of our derivative warrant liability, partially offset by $2.5 million gain on sales of marketable securities and $0.3 million in a deferred tax benefit. Changes in working capital consisted primarily of increases in accounts payable and accrued expenses of $2.6 million, due to related parties of $1.4 million and $0.9 million of deferred rent partially offset by an increase of $4.5 million of other current and non-current assets and $0.1 million decrease in deferred revenue.

Investing Activities

For the year ended December 31, 2017, net cash provided by investing activities was $99.6 million, which was primarily attributable to $254.2 million in sales and maturities of marketable securities partially offset by $111.4 million in purchases of marketable securities driven by the reinvestment of excess cash resources, $34.8 million in purchases of property and equipment mainly related to our laboratory and cGMP build out in Culver City, California, and equipment purchases for the Culver City, California, research and cGMP facility, and $8.5 million in the purchase of a cost method investment.

For the year ended December 31, 2016, net cash used in investing activities was $113.7 million, which was primarily attributable to $273.0 million in purchases of marketable securities as we invested the remainder of our excess cash and reinvested proceeds throughout 2016 as securities matured that were not needed for operating activities, and $6.6 million in purchases of property and equipment mainly related to our laboratory and cGMP build out in Culver City, California, and equipment purchases for the San Diego, California facility, partially offset by $165.9 million in sales or maturities of marketable securities.

For the year ended December 31, 2015, net cash used in investing activities was $175.2 million, which was primarily attributable to $198.1 million of purchases of marketable securities, $2.2 million purchase of property, plant and equipment, primarily related to our laboratory and cGMP build outs and a $1.8 million purchase of the remaining equity interest from unrelated third parties in Inex Bio. This was partially offset by $26.9 million in sales of equity investments.

Financing Activities

For the year ended December 31, 2017, net cash used in financing activities was $35.0 million, which consisted of $19.9 million in principal payments primarily related to our capital lease obligation, $15.2 million used for stock repurchases, and $1.0 million in net share settlement of exercised stock options and vesting of restricted stock units, or RSUs, for payment of employee payroll taxes, partially offset by $1.2 million in proceeds from the exercise of stock options and warrants.

For the year ended December 31, 2016, net cash used in financing activities was $15.6 million, which consisted of $15.8 million used for stock repurchases and $1.1 million in net share settlement of option exercises and vesting of RSUs for payment of employee payroll taxes, partially offset by $1.4 million in proceeds from the exercise of stock options and warrants.

For the year ended December 31, 2015, net cash provided by financing activities was $317.3 million, which consisted mainly of $316.5 million in net proceeds from our equity offerings, consisting of $221.5 million from our IPO, $78.0 million from a pre-IPO stock issuance, and $17.0 million from a private stock placement concurrent with the IPO. Additionally, $7.3 million in cash was provided from the exercise of warrants ($5.2 million of which were issued in conjunction with the acquisition of Inex Bio), and $0.9 million from the exercise of stock options. This was partially offset by a $4.8 million payment to repurchase shares of our common stock from an employee and $2.4 million of payroll taxes related to net share settlement in the vesting of RSUs.

Future Funding Requirements

To date, we have generated minimal revenue from non-exclusive license agreements with numerous pharmaceutical and biotechnology companies granting the right to use our cell lines and intellectual property for non-clinical use for laboratory testing that were spun out to Brink Biologics on June 9, 2015. We have not generated any revenue from product sales. We do not expect to generate significant revenue unless and until we obtain regulatory approval of and commercialize any of our product candidates and we do not know when, or if, this will occur. In addition, we expect our expenses to significantly increase in connection with our ongoing development activities, particularly as we continue the research, development and clinical trials of, and seek regulatory approval for, our product candidates. Moreover, since the completion of our IPO in July 2015, we have incurred and expect that we will continue to incur in the future additional costs associated with operating as a public company. In addition, subject to obtaining regulatory approval of our product candidates, we expect to incur significant commercialization expenses for product sales, marketing, manufacturing and distribution. We anticipate that we will need substantial additional funding in connection with our continuing operations. We expect that our expenses will increase substantially if and as we:

- continue research and development, including preclinical and clinical development of our existing product candidates;

- potentially seek regulatory approval for our product candidates;
- seek to discover and develop additional product candidates;
- establish a commercialization infrastructure and scale up our manufacturing and distribution capabilities to commercialize any of our product candidates for which we may obtain regulatory approval;
- seek to comply with regulatory standards and laws;
- maintain, leverage and expand our intellectual property portfolio;
- hire clinical, manufacturing, scientific and other personnel to support our product candidates development and future commercialization efforts;
    - add operational, financial and management information systems and personnel; and
- incur additional legal, accounting and other expenses in operating as a public company.

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Based upon our current operating plan, we expect that the net proceeds from our IPO and the concurrent private placement, together with our existing cash and cash equivalents and marketable securities, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months. We have based this estimate on assumptions that may prove to be incorrect, and we may use our available capital resources sooner than we currently expect. The successful development of any product candidate is highly uncertain. Due to the numerous risks and uncertainties associated with the development and commercialization of our product candidates, if approved, we are unable to estimate the amounts of increased capital outlays and operating expenses associated with completing the development of our product candidates.

Our future capital requirements will depend on many factors, including:

- the timing of, and the costs involved in, preclinical and clinical development and obtaining any regulatory approvals for our product candidates;
- the costs of manufacturing, distributing and processing our product candidates;
- the number and characteristics of any other product candidates we develop or acquire;
- our ability to establish and maintain strategic collaborations, licensing or other commercialization arrangements and the terms and timing of such arrangements including our arrangements with Viracta and Altor;
- the degree and rate of market acceptance of any approved products;
- the emergence, approval, availability, perceived advantages, relative cost, relative safety and relative efficacy of other products or treatments;
- the expenses needed to attract and retain skilled personnel;
- the costs associated with being a public company;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing intellectual property claims, including litigation costs and the outcome of such litigation;
- the timing, receipt and amount of sales of, or royalties on, any approved products; and
- any product liability or other lawsuits related to our product candidates.

Because all of our product candidates are in the early stages of preclinical and clinical development and the outcome of these efforts is uncertain, we cannot estimate the actual amounts necessary to successfully complete the development and commercialization of any of our product candidates or whether, or when, we may achieve profitability. Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and/or licensing arrangements. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or licensing arrangements with pharmaceutical partners, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates, or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market our product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations, Commitments and Contingencies

Contingencies

Securities Litigation

In March 2016, a putative securities class action complaint captioned Sudunagunta v. NantKwest, Inc., et al., No. 16-cv-01947 was filed in federal district court for the Central District of California related to our restatement of certain interim financial statements for the periods ended June 30, 2015 and September 30, 2015. A number of similar putative class actions were filed in federal and state court in California. The actions originally filed in state court were removed to federal court, and the various related actions have been consolidated. Plaintiffs assert causes of action for alleged violations of Sections 11 and 15 of the Securities Act of 1933 and Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Rule 10b-5 promulgated thereunder. Plaintiffs seek unspecified damages, costs and attorneys' fees, and equitable/injunctive or other relief on behalf of putative classes of persons who purchased or acquired our securities during various time periods from July 28, 2015 through March 11, 2016. In September 2017, the court denied defendants' motion to dismiss the third amended consolidated complaint. No trial date has been set. Management intends to vigorously defend these proceedings. At this time, we cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. Therefore, based on the information available at present, we cannot reasonably estimate a range of loss for this action. Should the we ultimately be found liable, the liability could have a material adverse effect on our results of operations for the period or periods in which it is incurred.

On September 6, 2016, a putative shareholder derivative complaint captioned Bushansky v. Soon-Shiong, et al., No. 37-2016-00030867-CU-SL-CTL was filed in California Superior Court, San Diego County also related to our restatement of certain interim financial statements. The complaint named as defendants our directors and outside auditor at the time of the IPO. We are named solely as a nominal defendant. The complaint alleges the directors breached their fiduciary duties to the Company and wasted corporate assets, and that the outside auditors committed malpractice. The complaint seeks, on behalf of the Company, unspecified damages, the return of directors' salaries for unspecified periods, and injunctive relief. At this time, we cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. In April 2017, the court entered a written order of dismissal after granting the Company's motion to dismiss the California complaint based on a corporate charter provision specifying a Delaware forum. Plaintiffs have filed a notice of appeal. Should we ultimately be found liable, the liability could have a material adverse effect on our results of operations for the period or periods in which it is incurred.

In October 2017, the first of two putative stockholder derivative complaints was filed in the Delaware Court of Chancery. The Delaware actions have been consolidated as In re NantKwest, Inc. Derivative Litigation, Cons. C.A. No. 2017-0774- VCL. A consolidated complaint was filed asserting that various of our current and former directors and officers breached their fiduciary duties to the Company based on factual allegations similar to those in the Sudunagunta and Bushansky actions. The complaint seeks damages and other relief on behalf of the Company, which is named solely as a nominal defendant. On February 5, 2018, the defendants filed a motion to dismiss the consolidated complaint. At this time, we cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. Therefore, based on the information available at present, we cannot reasonably estimate a range of loss for this action. Should we ultimately be found liable, the liability could have a material adverse effect on our results of operations for the period or periods in which it is incurred.

Appeal of USPTO Decision

In March 2009, we received a final rejection in one of our original patent applications pertaining to certain limited methods of use claims for NK-92 from the U.S. Patent and Trademark Office (the USPTO), but the USPTO allowed claims on all of the other proposed claims, including other methods of use. We appealed this decision with the USPTO Board of Appeals and, in the fall of 2013, the Board of Appeals reversed the Examiner's rejection of the claim to certain limited methods of use with NK-92, but affirmed the Examiner's rejection of the remaining patent claims. In December 2013, we brought an action in the U.S. District Court for the Eastern District of Virginia to review the decision of the USPTO as we disagreed with the decision as to the certain limited non-allowed claims. On September 2, 2015, the U.S. District Court granted the USPTO's motion for summary judgment. On September 24, 2015, we filed a notice of appeal to the United States Court of Appeals for the Federal Circuit. In September 2015, the USPTO filed a Motion for Expenses seeking $0.1 million for attorney's fees and the USPTO's expert witness fees. In February 2016, the U.S. District Court denied the USPTO's Motion for Expenses for attorney's fees and granted Director's Motion for Expenses for the USPTO's expert witness fees. The USPTO filed a notice of appeal on April 5, 2016. In May 2017, the Federal Circuit affirmed the U.S. District Court's summary judgment ruling. The formal mandate was issued on June 26, 2017. In June 2017, the Federal Circuit reversed the U.S. District Court and remanded the case for the U.S. District Court to enter an award of $0.1 million in favor of the USPTO. On August 31, 2017, a majority of active Federal Circuit judges voted to vacate the June 2017 decision and hear the case en banc sua sponte. The USPTO's filed its opening brief on November 15, 2017. We filed our opening brief on January 16, 2018. The USPTO filed its reply brief on January 31, 2018. Oral argument was heard on March 8, 2018. Based on the information available at present, we cannot reasonably estimate a range of loss for this action beyond the attorney and expert witness fees. Accordingly, the awarded fees have been accrued, but no liability associated with this action beyond the fees has been accrued. We are expensing legal costs associated with defending this litigation as the costs are incurred.

Contractual Obligations and Commitments

Our contractual obligations as of December 31, 2017 were as follows (in thousands):

	Payments Due by Period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Contractual Obligations					
Minimum lease obligations (1)	$21,287	$ 4,094	$8,164	$6,973	$ 2,056
Supply agreements	265	265	—	—	—
Total contractual obligations	$21,552	$ 4,359	$8,164	$6,973	$ 2,056

(1) Represents future minimum lease payments under all our leases as of December 31, 2017. The minimum lease payments above do not include any related common area maintenance charges or real estate taxes.

Capital Lease

In April 2017, we entered into an agreement to purchase a commercial building with approximately 36,434 square feet, located in El Segundo, California. This facility is a warehouse and distribution facility and is adjacent to our El Segundo, California, research and manufacturing facility. Upon the execution of the purchase agreement, we made a deposit of $5.0 million to the escrow holder and entered into a lease agreement related to this facility commencing on May 1, 2017. There was no monthly base rent under the lease. The escrow closed in September 2017 and we paid the remaining purchase price, including closing costs, of $15.3 million and terminated the lease agreement.

We had a bargain purchase option to purchase the building upon termination of the escrow period and, initially, accounted for the lease as a capital lease. Upon purchase of the building in September 2017, which resulted in the

termination of the capital lease, we accounted for the transaction as a single transaction and the carrying amount of the asset was adjusted for any differences between the carrying amount of the lease obligation and the initial carrying amount of the asset.

Build-to-suit Lease

In September 2016, we entered into a lease agreement with 605 Doug St, LLC, an entity owned by our Chairman and CEO, for approximately 24,250 square feet in El Segundo, California, which is being converted to a research and development laboratory and a cGMP laboratory. We are responsible for the costs to build out the laboratory and have incurred costs of approximately $30.0 million as of December 31, 2017. The lease runs from July 2016 through July 2023. We have the option to extend the lease for an additional three-year term through July 2026. The monthly rent is $0.1 million with annual increases of 3% beginning in July 2017.

Financing Lease Obligation

In November 2015, we entered into a facility license agreement with NantWorks, effective in May 2015, for approximately 9,500 square feet of office space in Culver City, California, that was converted to a research and development laboratory and a cGMP facility. We were responsible for the costs to build out the laboratory and incurred costs of approximately $3.5 million to complete the conversion. The term of the license extends through December 2020. We have the option to extend the license through December 2023. The monthly rent is $47,000 with annual increases of 3% beginning in January 2017.

Operating Leases

We lease a total of approximately 2,550 square feet of office space in Cardiff-by-the-Sea, California, for general office use, pursuant to an operating lease. We amended this lease to extend the term of the lease through August 31, 2018. Our total monthly lease payment is currently $13,200 per month. In August 2017, we subleased these premises for the remainder of the lease term for the same payment.

In March 2016, we entered into a lease agreement for approximately 7,893 square feet of laboratory and office space in Woburn, Massachusetts. The term of the lease is 48 months commencing on April 29, 2016. In June 2016, the lease was amended to add 260 square feet, for a total of 8,153 square feet. The base rent, including the amendment, is $19,000 per month with a $1 per square foot annual increase on each anniversary date.

In July 2015, we entered into a lease agreement for approximately 3,067 square feet of office space in Cary, North Carolina. The term of the lease is 26 months commencing on July 1, 2015. In 2017, the lease was extended to December 31, 2017. The lease expired on December 31, 2017 and we vacated the premises.

In June 2015, we entered into a lease agreement for an approximate 44,681 square foot facility in San Diego, California, for research and development laboratory, related office and other related uses. The term of the lease extends for seven years commencing on August 1, 2016. The base rent is $0.2 million per month with 3% annual increase each anniversary date. In July 2015, we entered into a sublease for the building with the then existing lessee for a term of one year commencing August 1, 2015. There was no fixed rent or operating expenses due by us during the sublease term other than utilities. We are currently subleasing approximately 8,500 square feet of the premises to related parties. (See Note 9 of the “Notes to Consolidated Financial Statements.”)

Off-Balance Sheet Arrangements

During the periods presented, we did not have, nor do we currently have, any off-balance sheet arrangements as defined under SEC rules.

Critical Accounting Policies, Significant Judgements and Use of Estimates

Management’s discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which are prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities, related disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. We continually evaluate our estimates and judgments, the most critical of which are those related to valuation of warrants, stock-based compensation, income taxes, preclinical and clinical trial accruals and valuation of build-to-suit lease assets. We base our estimates and judgments on historical experience and other factors that we believe to be reasonable under the circumstances. Materially different results can occur as circumstances change and additional information becomes known.

The following is not intended to be a comprehensive discussion of all of our significant accounting policies. See the notes accompanying our financial statements appearing in this report for a summary of all of our significant accounting policies and other disclosures required by U.S. GAAP.

Preclinical and Clinical Trial Accruals

As part of the process of preparing the financial statements, we are required to estimate expenses resulting from our obligations under contracts with vendors, clinical research organizations and consultants. The financial terms of these contracts vary and may result in payment flows that do not match the periods over which materials or services are provided under such contracts.

We estimate clinical trial and research agreement related expenses based on the services performed, pursuant to contracts with research institutions and clinical research organizations and other vendors that conduct clinical trials and research on our behalf. In accruing clinical and research related fees, we estimate the time period over which services will be performed and activity expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, we will adjust the accrual accordingly. Payments made to third parties under these arrangements in advance of the receipt of the related services are recorded as prepaid expenses until the services are rendered.

Research and Development Costs

Major components of research and development costs include cash compensation, stock-based compensation, depreciation and amortization expense on research and development property and equipment and intangible assets, costs of preclinical studies, clinical trials and related clinical manufacturing, costs of drug development, costs of materials and supplies, facilities cost, overhead costs, regulatory and compliance costs, and fees paid to consultants and other entities that conduct certain research and development activities on our behalf. Costs incurred in research and development are expensed as incurred.

Cash, Cash Equivalents and Marketable Securities

We invest our excess funds in investment grade short- to intermediate-term corporate debt securities, commercial paper, government sponsored securities and foreign government bonds and classifies these investments as available-for-sale. We consider all highly liquid investments purchased with original maturities of three months or less to be cash equivalents and all investments purchased with original maturities of greater than three months as marketable securities. Marketable securities with original maturities of 12 months or less are classified as short-term and marketable securities with original maturities greater than 12 months are classified as long-term. All marketable securities are reported at fair value and any unrealized gains and losses are reported as a component of accumulated other comprehensive income (loss), net of tax, on the consolidated statement of stockholders' equity (deficit), with the exception of unrealized losses believed to be other-than-temporary, which are recorded within other income (expense) in the current period. Realized gains and losses are included in other income (expense) on the consolidated statements of operations. Realized gains and losses from the sale of the securities and the amounts, net of tax, reclassified out of accumulated other comprehensive income, if any, are determined on a specific identification basis.

We periodically evaluate whether declines in fair values of our investments below their book value are other-than-temporary. This evaluation consists of several qualitative and quantitative factors regarding the severity and duration of the unrealized loss, as well as our ability and intent to hold the investment until a forecasted recovery occurs. Additionally, we assess whether we plan to sell the security or it is more likely than not we will be required to sell any investment before recovery of its amortized cost basis. Factors considered include quoted market prices, recent financial results and operating trends, implied values from any recent transactions or offers of investee securities, credit quality of debt instrument issuers, other publicly available information that may affect the value of our investments, duration and severity of the decline in value and our strategy and intentions for holding the investment. There were no other-than-temporary impairments recorded in years ended December 31, 2017, 2016 and 2015.

We minimize the credit risk associated with cash and cash equivalents by periodically evaluating the credit quality of its primary financial institutions. While we maintain cash deposits in FDIC insured financial institutions in excess of federally insured limits, management believes we are not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held. We have not experienced any losses on such accounts.

We have funded a certificate of deposit (CD) as a substitute letter of credit for one of the leased properties. This CD is reported as long-term restricted cash and is included in other assets on the consolidated balance sheet as the landlord is

the beneficiary of the account and we are not able to access the funds during the term of the lease.

Contingencies

We record accruals for loss contingencies to the extent that we conclude it is probable that a liability has been incurred and the amount of the related loss can be reasonably estimated. We evaluate, on a quarterly basis, developments in legal proceedings and other matters that could cause a change in the potential amount of the liability recorded or of the range of potential losses disclosed. Additionally, we have reflected our right to insurance recoveries, limited to the extent of incurred or probably losses, as a receivable when such recoveries have been agreed to with their third-party insurers and receipt is deemed probable. This includes instances where our third-party insurers have agreed to pay certain legal defense costs directly to applicable law firms on our behalf.

Cost Method Investment

We own non-marketable equity securities that are accounted for under the cost method because the preferred stock is not considered in-substance common stock and the preferred stock does not have a readily determinable fair value. All investments are reviewed on a regular basis for possible impairment. If an investment's fair value is determined to be less than its net carrying value and the decline is determined to be other-than-temporary, the investment is written down to its fair value. Such an evaluation is judgmental and dependent on specific facts and circumstances. Factors considered in determining whether an other-than-temporary decline in value has occurred include: market value of the investment based on most recent rounds of financing by the investee, length of time that the market value was below its cost basis, financial condition and business prospects of the investee, our intent and ability to retain the investment for a sufficient period of time to allow for recovery in market value of the investment, issues that raise concerns about the investee's ability to continue as a going concern, and any other information that we may be aware of related to the investment.

Fair Value of Financial Instruments

We record our available-for-sale investments at fair value. At December 31, 2017, our cash equivalents and investments in marketable securities totaled $137.4 million. FASB ASC Topic 820, Fair Value Measurements and Disclosures, or ASC 820, establishes three levels of inputs that may be used to measure fair value (see Note 6 of our “Notes to Consolidated Financial Statements”). Each level of input represents varying degrees of subjectivity and difficulty involved in determining fair value. Valuations using Level 1 and 2 inputs are generally based on price quotations and other observable inputs in active markets and do not require significant management judgment or estimation. We utilize a third-party pricing service to assist us in obtaining fair value pricing for these investments. While pricing for these securities is based on proprietary models, the inputs used are based on observable market information; therefore, we have classified our inputs as Level 1 and Level 2.

Until the second quarter of 2015, we had common stock warrants that met the definition of derivative financial instruments and were accounted for as a derivative liability. The fair value of this warrant derivative liability was based on a Monte Carlo simulation model at each reporting period. Estimating the fair value of the underlying shares was highly complex and subjective because our stock was not publicly traded at the time. The derivative warrant liability was settled upon the exercise of the underlying warrants in the second quarter of 2015.

Long-Lived Assets

We recorded long-lived assets that include property, plant, equipment and intangible assets. Furthermore, we are deemed to be the owner, for accounting purposes, during the construction phase of certain long-lived assets under build-to-suit lease arrangements because of our involvement with the construction, our exposure to any potential cost overruns and our other commitments under the arrangements. In these cases, we recognize a build-to-suit lease asset under construction and a corresponding build-to-suit lease liability on the consolidated balance sheets.

Upon completion of construction, we evaluate the de-recognition of the asset and liability under the provisions of ASC 840-40 Leases – Sale-Leaseback Transactions. Where the lease does not meet the criteria for sale-leaseback accounting treatment, due to the continuing involvement in the project resulting from the significant collateral we provided to the landlord in the form of building improvements, we account for the lease as a financing obligation. Under the financing obligation, the deemed value of the building is capitalized as property, plant and equipment with an offsetting financing obligation on the consolidated balance sheets. The asset is then depreciated over the building’s estimated useful life. At the end of the lease term, we will de-recognize both the net book values of the building and financing obligation.

We review long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparison of the carrying amount to the

future net cash flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected undiscounted future cash flows arising from the asset using a discount rate determined by management to be commensurate with the risk inherent to the Company’s current business model.

Lease Obligations

We categorize leases at their inception as either operating or capital leases. On certain of our lease agreements, we may receive rent holidays and other incentives. We recognize lease costs on a straight-line basis without regard to deferred payment terms, such as rent holidays that defer the commencement date of required payments. Additionally, incentives we receive for leases categorized as operating leases are treated as a reduction of our costs over the term of the agreement.

We established assets and liabilities for the estimated construction costs incurred under build-to-suit lease arrangements to the extent we are involved in the construction of structural improvements or take construction risk prior to commencement of a lease. Upon occupancy of facilities under build-to-suit leases, we assess whether these arrangements qualify for sales recognition under the sale-leaseback accounting guidance. If we continue to be the deemed owner, the facilities are accounted for as financing leases.

Stock-based Compensation

We account for stock-based compensation under the provisions of FASB ASC Topic 718, Compensation—Stock Compensation, or ASC 718, which requires the measurement and recognition of compensation expense for all stock-based awards made to employees and directors based on estimated fair values on the grant date. We estimate the fair value of options and warrants on the date of grant using the Black-Scholes-Merton option pricing model, or Black-Scholes model. The value of the award is recognized as expense over the requisite service periods using the straight-line method. See Note 12 of our “Notes to Consolidated Financial Statements” for a complete discussion of our equity compensation programs and the fair value assumptions used to determine our stock-based compensation expense.

We account for stock-based compensation awards granted to non-employees in accordance with FASB ASC Topic 505-50, Equity-Based Payments to Non-Employees, or ASC 505-50. Under ASC 505-50, we determine the fair value of the stock-based compensation awards granted as either the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable. If the fair value of equity instruments issued is used, it is measured using the stock price and other measurement assumptions as of the earlier of either (1) the date at which commitment for performance by the counterparty to earn the equity instruments is reached, or (2) the date at which the counterparty’s performance is complete.

The Financial Accounting Standards Board, or FASB, issued Accounting Standard Update 2016-09, or ASU 2016-09, Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, as part of its initiative to reduce complexity in accounting standards, and we adopted this update in the second quarter of 2016. As a result of the adoption, we made a policy election to record forfeitures of stock-based compensation awards as they occur rather than estimate the number of awards that we expect to vest. We will reflect excess tax benefits as an operating activity in our statement of cash flows. We elected to apply this provision of ASU 2016-09 under the modified-retrospective transition method. Consistent with requirements in the standard, we present the cash paid when we withhold shares for tax-withholding purposes as a financing activity in the statement of cash flows.

Stock Repurchases

In November 2015, the board of directors approved a share repurchase program, or 2015 Share Repurchase Program, allowing the CEO or CFO, on behalf of the Company, to repurchase from time to time, in the open market or in privately negotiated transactions, up to $50.0 million of the Company’s outstanding shares of common stock, exclusive of any commissions, markups or expenses. The timing and amounts of any purchases will be based on market conditions and other factors, including price, regulatory requirements and other corporate considerations. The 2015 Share Repurchase Program does not require the purchase of any minimum number of shares and may be suspended, modified or discontinued at any time without prior notice. We expect to finance the purchases with existing cash balances. As it is the intent for the repurchased shares to be retired, we have elected to account for the shares repurchased under the constructive retirement method. For shares repurchased in excess of par, we will allocate the excess value to accumulated deficit.

Utilization of Net Operating Loss Carryforwards (NOLs) and Research and Development Credits

As of December 31, 2017, we had federal, state and foreign income tax NOLs of approximately $165.9 million, $136.2 million and $0.2 million, respectively, which will begin to expire at various dates starting with 2023. As of

December 31, 2017 we also had federal and state research and development tax credit carryforwards of $3.2 million and $1.9 million, respectively, to offset future income taxes.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, 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 carry forwards and other pre-change tax attributes to offset its post-change income may be limited. We have completed a study to determine the impact of ownership changes on our NOLs and we have undergone a significant ownership change. Accordingly, some of our NOLs and research and development credits have been derecognized.

Recent Accounting Pronouncements

Application of New or Revised Accounting Standards – Not Yet Adopted

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. This guidance requires restricted cash and restricted cash equivalents to be included with the cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the consolidated statement of cash flows. ASU 2016-18 is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted, but we do not plan to adopt early. The evaluation of ASU 2016-18 has been completed and the adoption will not have a significant impact on our consolidated financial statements and disclosures.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Payments. This guidance provides classification guidance for eight types of cash receipts and payments shown on the consolidated statement of cash flows, including proceeds from the settlement of insurance claims. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted, but we do not plan to adopt early. The evaluation of ASU 2016-15 has been completed and the adoption will not have a significant impact on our consolidated financial statements and disclosures.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. This new guidance is intended to present credit losses on available for sale debt securities as an allowance rather than as a write-down. ASU 2016-13 is effective for annual reporting periods, including interim periods within those annual periods, beginning after December 15, 2019, with early adoption permitted for those fiscal years beginning after December 15, 2018. Adoption of ASU 2016-13 is not expected to have a significant impact on our consolidated financial statements and disclosures.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842) (ASU 2016-02), which requires lessees to recognize assets and liabilities for operating leases with lease terms greater than twelve months in the balance sheet. The update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted. We are currently evaluating the impact of the adoption of ASU 2016-02 in our financial statements and disclosures. The adoption is expected to result in a significant increase in the total assets and liabilities reported on our consolidated balance sheet.

In January 2016, the FASB issued ASU 2016-01, Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The new standard principally affects accounting standards for equity investments, financial liabilities where the fair value option has been elected, and the presentation and disclosure requirements for financial instruments. Upon the effective date of the new standard, all equity investments in unconsolidated entities, other than those accounted for using the equity method of accounting, will generally, unless the investment does not have a readily determinable fair value, be measured at fair value through earnings. As a result of the Update, effective January 1, 2018, we will account for our preferred stock investment in Viracta, or investment, as an equity investment rather than cost method investment. Because our investment meets the practicability exception, we will estimate the fair value at its cost minus any impairment, plus or minus changes resulting from observable price changes. Additionally, changes in fair value will be recorded through other income (expense), net on our consolidated statements of operations. Other updates included in the new standard are not expected to have a significant impact on our consolidated financial statements and disclosures.

In May 2014, the FASB issued guidance codified in ASC Topic 606, ASU 2014-09, Revenue Recognition—Revenue from Contracts with Customers, which amends the guidance in former ASC Topic 605, Revenue Recognition, and

was initially to be effective beginning January 1, 2017. On August 12, 2015, the FASB issued guidance which defers the effective date of ASC Topic 606 by one year to January 1, 2018 for public companies. This guidance requires that entities recognize revenue to depict the transfer of 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: (1) full retrospective adoption, meaning the standard is applied to all periods presented, or (2) modified retrospective adoption, meaning the cumulative effect of applying the new standard is recognized as an adjustment to the opening retained earnings balance.

We completed the assessment of the new standard's effect on our financial statements based on review of our contracts with customers. We currently believe that the timing of recognizing revenue for our license agreements with customers will not significantly change. Our accounting for sales-based royalty payments from our licensing arrangements is not expected to change. However, the new standard no longer requires the transaction price to be fixed or determinable and certain variable consideration, such as event-based milestone payments, might be recognized prior to the occurrence or resolution of the contingent event (subject to a revenue reversal constraint). Given the current uncertainty surrounding these event-based milestone payments and minimal change to our accounting for existing sales-based royalty payments, we expect to record an immaterial adjustment to accumulated deficit upon adoption of the standard on January 1, 2018. We also expect to adopt the new standard using the modified retrospective approach.

The new standard requires disclosure of quantitative and qualitative information that enables users of financial statements to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. We expect to expand our existing revenue disclosure upon adoption of the new standard to meet this requirement.

JOBS Act

On April 5, 2012, the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, was enacted. Section 107 of the JOBS Act provides that an "emerging growth company" can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. In other words, an "emerging growth company" can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies. Subject to certain conditions set forth in the JOBS Act, as an "emerging growth company," we intend to rely on certain exemptions and reduced reporting requirements provided by the JOBS Act, including those relating to (i) providing an auditor's attestation report on our system of internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act and (ii) complying with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, known as the auditor discussion and analysis. We will remain an "emerging growth company" until the earliest of (i) the last day of our first fiscal year in which we have total annual gross revenues of $1 billion or more, (ii) the date on which we are deemed to be a "large accelerated filer" under the rules of the SEC with at least $700 million of outstanding equity securities held by non-affiliates, (iii) the date on which we have issued more than $1 billion in non-convertible debt during the previous three years, or (iv) the last day of our fiscal year following the fifth anniversary of the date of the completion of our IPO.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Our exposure to market risk for changes in interest rates relates primarily to interest earned on our cash equivalents and investments. The primary objective of our investment activities is to preserve our capital to fund operations. A secondary objective is to maximize income from our investments without assuming significant risk. Our investment policy provides for investments in low-risk, investment-grade debt instruments. As of December 31, 2017, we had $23.9 million in cash and cash equivalents and $133.9 million in our investment portfolio. Our cash equivalents are short term investments with maturities of 90 days or less at the time of purchase. We maintain cash deposits in FDIC insured financial institutions in excess of federally insured limits. However, we believe that we are not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held. As of December 31, 2017, we did not hold or issue financial instruments for trading purposes. To date, we have not realized any significant loss of principal on our investments.

Interest rate risk – cash

With the cash discussed above, our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of U.S interest rates. However, we do not believe a sudden change in the interest rates would have a material impact on our financial condition or results of operations due to the short-term maturities on our cash equivalents. A hypothetical 100 basis point change in interest rates during any of the periods presented would not have had a material impact on our consolidated financial statements.

Interest rate risk – cash equivalents and investment portfolio

We invest a portion of our cash in a number of diversified fixed and floating rate securities, consisting of marketable debt securities and debt funds that are subject to interest rate risk. Changes in the general level of interest rates can affect the fair value of our investment portfolio. If interest rates in the general economy were to rise, our holdings could lose value. At December 31, 2017, a hypothetical increase in interest rates of 100 basis points across the entire yield curve on our holdings would not have resulted in a material impact on the fair value of our portfolio.

Foreign currency exchange risk

We contract with clinical research organizations, or CROs, investigational sites and suppliers in foreign countries and we have a bank account in Korea. We are, therefore, subject to fluctuations in foreign currency rates in connection with these agreements. We have not entered into any material foreign currency hedging contracts although we may do so in the future. To date we have not incurred any material effects from foreign currency changes on these contracts. The effect of a 10% adverse change in exchange rates on foreign currency denominated cash and payables as of December 31, 2017 would not have been material. However, fluctuations in currency exchange rates could harm our business in the future.

Inflation risk

Inflation may affect us by increasing our cost of labor and clinical trial costs. We do not believe that inflation has had a material effect on our business, financial condition or results of operations for any period presented herein.

Item 8. Financial Statements and Supplementary Data.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of NantKwest, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of NantKwest, Inc. (the Company) as of December 31, 2017 and 2016, the related consolidated statements of operations, comprehensive loss, stockholders' equity (deficit) and cash flows for each of the two years in the period ended December 31, 2017, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 2016.

Los Angeles, California

March 12, 2018

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders

NantKwest, Inc.

We have audited the accompanying consolidated statements of operations, comprehensive loss, stockholders' equity (deficit) and cash flows of NantKwest, Inc. for the year ended December 31, 2015. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements 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 the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit 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 audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the results of their operations and their cash flows of NantKwest, Inc. for the year ended December 31, 2015, in conformity with accounting principles generally accepted in the United States of America.

/s/ Mayer Hoffman McCann P.C.
San Diego, California
March 30, 2016

NantKwest, Inc.

Consolidated Balance Sheets

(in thousands, except share and per share amounts)

	As of December 31,	
	2017	2016
ASSETS		
Current assets:		
Cash and cash equivalents	$23,872	$8,083
Due from related parties	154	1,089
Prepaid expenses and other current assets	4,152	5,135
Marketable securities	104,280	190,838
Total current assets	132,458	205,145
Marketable securities, noncurrent	29,600	87,571
Property, plant and equipment, net	76,726	18,906
Cost method investment	8,500	—
Intangible assets, net	2,826	5,086
Other assets	330	788
Total assets	$250,440	$317,496
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$5,865	$4,045
Accrued expenses	11,267	5,864
Due to related parties	2,363	1,753
Other current liabilities	1,373	891
Total current liabilities	20,868	12,553
Build-to-suit liability, less current portion	4,909	5,651
Financing obligation, less current portion	1,741	2,025
Deferred rent	3,325	2,426
Deferred revenue	166	187
Deferred tax liability	498	996
Other liabilities	89	240
Total liabilities	31,596	24,078
Commitments and contingencies (Note 8)		
Stockholders' equity		
Common stock, $0.0001 par value; 500,000,000 shares authorized; 79,021,878 and 81,983,937 issued and outstanding as of December 31, 2017 and 2016, respectively	8	8
Additional paid-in capital	717,930	680,757
Accumulated other comprehensive loss	(381)	(284)
Accumulated deficit	(498,713)	(387,063)
Total stockholders' equity	218,844	293,418
Total liabilities and stockholders' equity	$250,440	$317,496

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

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NantKwest, Inc.

Consolidated Statements of Operations

(in thousands, except share and per share amounts)

	For the Year Ended December 31,		
	2017	2016	2015
Revenue	$45	$44	$236
Operating expenses:			
Research and development	42,044	29,153	11,434
Selling, general and administrative	57,121	95,391	227,678
Total operating expenses	99,165	124,544	239,112
Loss from operations	(99,120)	(124,500)	(238,876)
Other income (expense):			
Investment income, net	2,665	3,097	2,988
Change in fair value of warrant liability	—	—	(1,366)
Interest expense	(618)	(66)	—
Other income, net	157	88	77
Total other income	2,204	3,119	1,699
Loss before income taxes	(96,916)	(121,381)	(237,177)
Income tax benefit, net	(493)	(572)	(301)
Net loss	$(96,423)	$(120,809)	$(236,876)
Net loss per share:			
Basic and diluted	$(1.20)	$(1.47)	$(3.31)
Weighted average number of shares during the period:			
Basic and diluted	80,583,910	81,979,005	71,519,609

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

NantKwest, Inc.

Consolidated Statements of Comprehensive Loss

(in thousands)

	For the Year Ended December 31,		
	2017	2016	2015
Net loss	$(96,423)	$(120,809)	$(236,876)
Other comprehensive loss, net of income taxes:			
Net unrealized gain (loss) on available-for-sale securities	(65)	5	(192)
Reclassification of net realized gains on available-for-sale securities included in net loss	(32)	(97)	—
Total other comprehensive loss	(97)	(92)	(192)
Comprehensive loss	$(96,520)	$(120,901)	$(237,068)

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

NantKwest, Inc.

Consolidated Statements of Stockholders' Equity (Deficit)

(in thousands, except share and per share amounts)

	Common Stock Class A		Common		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	
	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Total
Balance at December 31, 2014	61,094,367	$ 6	—	$ —	$71,158	$ —	$(13,573)	$57,591
Exercise of stock options	949,396	1	177,703	—	877	—	—	878
Stock-based compensation expense	—	—	—	—	211,221	—	—	211,221
Vesting of restricted stock units (RSUs)	—	—	485,150	—	—	—	—	—
Net share settlement for RSU vesting and option exercises	—	—	(96,612)	—	(2,415)	—	—	(2,415)
Warrants issued in conjunction with Inex Bio purchase	—	—	—	—	5,170			5,170
Exercise of warrants	4,106,492	—	570,609	—	7,348	—	—	7,348
Repurchase of common stock	(249,952)	—	—	—	(4,798)	—	—	(4,798)
Reclassification of warrant liability due to exercise	—	—	—	—	1,543	—	—	1,543
Conversion of Class A common stock to common stock	(65,900,303)	(7)	65,900,303	7	—	—	—	—
Issuance of common stock less issuance costs of $28,000	—	—	4,063,333	—	77,977	—	—	77,977
Spinout of Brink Biologics, Inc.	—	—	—	—	—	—	73	73
Issuance of stock in initial public offering, net of $16.8 million in offering costs	—	—	9,531,200	1	221,474	—	—	221,475
Issuance of common stock in a private placement	—	—	680,000	—	17,000	—	—	17,000

concurrent with initial public offering								
Other comprehensive loss	—	—	—	—	—	(192)	—	(192)
Net loss	—	—	—	—	—	—	(236,876)	(236,876)
Balance at December 31, 2015	—	$ —	81,311,686	$ 8	$606,555	$ (192)	$(250,376)	$355,995
Exercise of stock options	—	—	2,398,883	—	1,373	—	—	1,373
Stock-based compensation expense	—	—	—	—	73,852	—	—	73,852
Vesting of RSUs	—	—	537,982	—	—	—	—	—
Net share settlement for RSU vesting and option exercises	—	—	(154,127)	—	(1,106)	—	—	(1,106)
Exercise of warrants	—	—	47,457	—	52	—	—	52
Change in accounting principle - ASU 2016-09 forfeiture adjustment	—	—	—	—	31	—	(31)	—
Repurchase of common stock	—	—	(2,157,944)	—	—	—	(15,847)	(15,847)
Other comprehensive loss	—	—	—	—	—	(92)	—	(92)
Net loss	—	—	—	—	—	—	(120,809)	(120,809)
Balance at December 31, 2016	—	$ —	81,983,937	$ 8	$680,757	$ (284)	$(387,063)	$293,418
Exercise of stock options	—	—	614,136	—	1,154	—	—	1,154
Stock-based compensation expense	—	—	—	—	36,997	—	—	36,997
Vesting of RSUs	—	—	244,209	—	—	—	—	—
Net share settlement for RSU vesting and option exercises	—	—	(234,020)	—	(1,039)	—	—	(1,039)
Exercise of warrants	—	—	47,226	—	61	—	—	61
Repurchase of common stock	—	—	(3,633,610)	—	—	—	(15,227)	(15,227)
Other comprehensive loss	—	—	—	—	—	(97)	—	(97)
Net loss	—	—	—	—	—	—	(96,423)	$(96,423)
Balance at December 31, 2017	—	$ —	79,021,878	$ 8	$717,930	$ (381)	$(498,713)	$218,844

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

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NantKwest, Inc.

Consolidated Statements of Cash Flows

(in thousands)

	For the Year Ended December 31,		
	2017	2016	2015
Operating activities:			
Net loss	$(96,423)	$(120,809)	$(236,876)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	5,566	3,607	1,472
Stock-based compensation expense	36,997	73,852	211,221
Amortization of net premiums on marketable securities	1,597	2,182	38
Deferred income tax benefit	(497)	(575)	(302)
Non-cash interest items, net	720	(573)	72
Loss on disposal of assets	64	18	—
Gain on sales of marketable securities	(32)	(137)	(2,501)
Change in value of warrant liability	—	—	1,366
Loss incurred by Inex Bio	—	—	56
Gain on settlement of note payable	—	—	(133)
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	156	(1,458)	(3,231)
Other assets	458	153	(1,194)
Accounts payable	150	888	627
Accrued expenses and other liabilities	(299)	2,127	1,991
Due to related parties	1,562	378	1,352
Deferred rent and revenue	1,201	1,754	737
Net cash used in operating activities	(48,780)	(38,593)	(25,305)
Investing activities:			
Purchases of property, plant and equipment	(34,815)	(6,560)	(2,241)
Purchase of cost method investment	(8,500)	—	—
Purchases of marketable securities	(111,355)	(272,999)	(198,068)
Sales/maturities of marketable securities	254,222	165,887	26,903
Purchase of Inex Bio Inc., net of cash acquired	—	—	(1,818)
Net cash (used in) provided by investing activities	99,552	(113,672)	(175,224)
Financing activities:			
Principal payments of financing/capital lease obligations	(19,932)	(32)	—
Repurchase of common stock	(15,227)	(15,847)	(4,798)
Proceeds from exercise of stock options	1,154	1,373	878
Proceeds from exercise of warrants	61	52	7,348
Net share settlement for RSU vesting and option exercises	(1,039)	(1,106)	(2,415)
Proceeds from equity offerings, net of issuance costs	—	—	316,452
Repayments of notes payable	—	—	(132)
Net cash (used in) provided by financing activities	(34,983)	(15,560)	317,333
Net increase (decrease) in cash and cash equivalents	15,789	(167,825)	116,804
Cash and cash equivalents, beginning of period	8,083	175,908	59,104
Cash and cash equivalents, end of period	$23,872	$8,083	$175,908
Supplemental disclosure of cash flow information:			

Cash paid during the period for:			
Interest	$668	$66	$—
Income taxes	$3	$2	$1
Supplemental disclosure of non-cash investing and financing activities:			
Property and equipment purchases acquired under capital lease	$19,448	$—	$—
Property and equipment purchases included in accounts payable, accrued expenses, and other liabilities	$9,500	$2,753	$457
Unrealized loss on marketable securities	$(97)	$(102)	$(182)
Cashless exercise of stock options and warrants	$16	$456	$1,543
Estimated fair value of buildings under build-to-suit leases	$—	$5,139	$2,740
Lease incentive with a related party	$—	$849	$—
Issuance of warrants in Inex Bio, Inc. acquisition	$—	$—	$5,170

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

NantKwest, Inc.

Notes to Consolidated Financial Statements

1. Description of Business and Basis of Presentation

Organization

NantKwest, Inc. (the Company) was incorporated in Illinois on October 7, 2002 under the name ZelleRx Corporation. On January 22, 2010, the Company changed its name to Conkwest, Inc., and on July 10, 2015, the Company changed its name to NantKwest, Inc. In March 2014, the Company redomesticated from the State of Illinois to the State of Delaware and the Illinois Company ceased to exist. The Company is a pioneering clinical-stage immunotherapy biotechnology company headquartered in San Diego, California with certain operations in Culver City and El Segundo, California and Woburn, Massachusetts.

The Company is focused on harnessing the power of the innate immune system by using the natural killer cell to treat cancer, infectious diseases and inflammatory diseases. A critical aspect of our strategy is to invest significantly in expanding our aNK platform and the development of our product candidates.

The Company holds the exclusive right to commercialize activated natural killer (aNK) cells, a commercially viable natural killer cell-line, and a variety of genetically modified derivatives capable of killing cancer and virally infected cells. The Company owns corresponding U.S. and foreign composition and methods-of-use patents and applications covering the clinical use of aNK cells as a therapeutic to treat a spectrum of clinical conditions.

The Company also licensed exclusive commercial rights to a portfolio of CD16 bearing aNK cells along with the corresponding U.S. and foreign composition and methods-of-use patents and applications covering the non-clinical use in laboratory testing of monoclonal antibodies, as well as clinical use as a therapeutic to treat cancers in combination with antibody products. The Company has licensed or sub-licensed its CD16 bearing aNK cell lines and intellectual property to numerous pharmaceutical and biotechnology companies for such non-clinical uses. The Company also licensed exclusive commercial rights to a unique HER2-specific receptor bearing aNK cell line along with the corresponding U.S. and foreign composition and methods-of-use patents and applications covering clinical use as a therapeutic to treat cancers.

The Company retains exclusive worldwide rights to clinical and research data, intellectual property and know-how developed with the Company’s aNK cells, as well as the only clinical grade master cell bank.

Initial Public Offering

In July 2015, the Company completed an initial public offering (IPO) of its common stock. In connection with its IPO, the Company issued and sold 9,531,200 shares of its common stock, at a price to the public of $25 per share. The Company’s shares of common stock began trading on the NASDAQ Global Market on July 28, 2015. As a result of the IPO, the Company received approximately $221.5 million in net proceeds, after deducting underwriting discounts, commissions and offering expenses of $16.8 million.

Liquidity

As of December 31, 2017, the Company had an accumulated deficit of approximately $498.7 million. The Company also had negative cash flow from operations of approximately $48.8 million during the year ended December 31, 2017. The Company expects that it will likely need additional capital to further fund development of, and seek regulatory approvals for, its product candidates, and begin to commercialize any approved products.

The Company is currently focused primarily on the development of immunotherapeutic treatments for cancers and debilitating viral infections using targeted cancer killing cell lines, and believes such activities will result in the Company's continued incurrence of significant research and development and other expenses related to those programs. If the clinical trials for any of the Company's product candidates fail or produce unsuccessful results and those product candidates do not gain regulatory approval, or if any of the Company's product candidates, if approved, fails to achieve market acceptance, the Company may never become profitable. Even if the Company achieves profitability in the future, it may not be able to sustain profitability in subsequent periods. The Company intends to cover its future operating expenses through cash and cash equivalents, marketable securities, and through a combination of equity offerings, debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements. Additional financing may not be available to the Company when needed and, if available, financing may not be obtained on terms favorable to the Company or its stockholders.

While the Company expects its existing cash and cash equivalents and marketable securities will enable it to fund operations and capital expenditure requirements for the next twelve months, it may not have sufficient funds to reach commercialization. Failure to obtain adequate financing when needed may require the Company to delay, reduce, limit or terminate some or all of its development programs or future commercialization efforts or grant rights to develop and market product candidates that the Company might otherwise prefer to develop and market itself, which could adversely affect the Company's ability to operate as a going concern. If the Company raises additional funds from the issuance of equity securities, substantial dilution to existing stockholders may result. If the Company raises additional funds by incurring debt financing, the terms of the debt may involve significant cash payment obligations, as well as covenants and specific financial ratios that may restrict the Company's ability to operate its business.

Forward Stock Split

On July 10, 2015, the Company effected a 1.8515-for-1 forward stock split of its outstanding common stock. All applicable share data, per share amounts and related information on the consolidated financial statements and notes thereto have been adjusted retroactively to give effect to the 1.8515-for-1 forward stock split. See Note 11 for further information.

2. Summary of Significant Accounting Policies

Principles of Consolidation and Equity Investments

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries, and have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). All intercompany amounts have been eliminated.

The Company applies the variable interest model under Accounting Standards Codification (ASC) Topic 810, Consolidation, to any entity in which the Company holds an equity investment or to which the Company has the power to direct the entity's most significant economic activities and the ability to participate in the entity's economics. If the entity is within the scope of the variable interest model and meets the definition of a variable interest entity (VIE), the Company considers whether it must consolidate the VIE or provide additional disclosures regarding the Company's involvement with the VIE. If the Company determines that it is the primary beneficiary of the VIE, the Company will consolidate the VIE. This analysis is performed at the initial investment in the entity or upon any reconsideration event.

For entities the Company holds as an equity investment and are not consolidated under the VIE Model, the Company considers whether its investment constitutes ownership of a majority of the voting interests in the entity and therefore should be considered for consolidation under the voting interest model.

Unconsolidated equity investments in the common stock or in-substance common stock of an entity under which the Company is able to exercise significant influence, but not control, are accounted for using the equity method. The Company's ability to exercise significant influence is generally indicated by ownership of 20 to 50 percent interest in the voting securities of the entity.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, the Company evaluates its estimates, including those related to the valuation of warrants, stock-based compensation, the valuation allowance for deferred tax assets, preclinical and clinical trial accruals, impairment

assessments, and the valuation of build-to-suit lease assets. The Company bases its estimates on historical experience and on various other market-specific and relevant assumptions that it believes to be reasonable under the circumstances. Actual results could differ from those estimates.

Risks and Uncertainties

Contingencies

The Company records accruals for loss contingencies to the extent that the Company concludes 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 a change in the potential amount of the liability recorded or of the range of potential losses disclosed. Additionally, the Company has reflected its right to insurance recoveries, limited to the extent of incurred or probable losses, as a receivable when such recoveries have been agreed to with its third-party insurers and receipt is deemed probable. This includes instances where the Company's third-party insurers have agreed to pay certain legal defense costs directly to applicable law firms on the Company's behalf.

Cash, Cash Equivalents and Marketable Securities

The Company invests its excess funds in investment grade short- to intermediate-term corporate debt securities, commercial paper, government sponsored securities and foreign government bonds and classifies these investments as available-for-sale. The Company considers all highly liquid investments purchased with original maturities of three months or less to be cash equivalents and all investments purchased with original maturities of greater than three months as marketable securities. Marketable securities with original maturities of 12 months or less are classified as short-term and marketable securities with original maturities greater than 12 months are classified as long-term. All marketable securities are reported at fair value and any unrealized gains and losses are reported as a component of accumulated other comprehensive income (loss), net of tax, on the consolidated statement of stockholders' equity (deficit), with the exception of unrealized losses believed to be other-than-temporary, which are recorded within other income (expense) in the current period. Realized gains and losses are included in other income (expense) on the consolidated statements of operations. Realized gains and losses from the sale of the securities and the amounts, net of tax, reclassified out of accumulated other comprehensive income, if any, are determined on a specific identification basis.

The Company periodically evaluates whether declines in fair values of its investments below their book value are other-than-temporary. This evaluation consists of several qualitative and quantitative factors regarding the severity and duration of the unrealized loss, as well as the Company's ability and intent to hold the investment until a forecasted recovery occurs. Additionally, the Company assesses whether it has plans to sell the security or it is more likely than not it will be required to sell any investment before recovery of its amortized cost basis. Factors considered include quoted market prices, recent financial results and operating trends, implied values from any recent transactions or offers of investee securities, credit quality of debt instrument issuers, other publicly available information that may affect the value of our investments, duration and severity of the decline in value and the Company's strategy and intentions for holding the investment. There were no other than temporary impairments recorded in years ended December 31, 2017, 2016 and 2015.

The Company minimizes its credit risk associated with cash and cash equivalents by periodically evaluating the credit quality of its primary financial institutions. While the Company maintains cash deposits in FDIC insured financial institutions in excess of federally insured limits, management believes the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held. The Company has not experienced any losses on such accounts.

The Company has funded a certificate of deposit (CD) as a substitute letter of credit for one of the leased properties. This CD is reported as long-term restricted cash and is included in other assets on the consolidated balance sheet as the landlord is the beneficiary of the account and the Company is not able to access the funds during the term of the lease.

Property, Plant and Equipment

Property, plant and equipment is stated at historical cost less accumulated depreciation. Historical cost includes expenditures that are directly attributable to the acquisition of the items. All repairs and maintenance are charged to net loss during the financial period in which they are incurred. Depreciation of property, plant and equipment is calculated using the straight-line method over the estimated useful lives of the assets, as follows:

Buildings	39 years
Software	3 years
Laboratory equipment	5 years
Furniture & fixtures	5 years
IT equipment	3 years
Leasehold improvements	The lesser of the lease term or the life of the asset

On disposal or impairment of property, plant and equipment, the cost and related accumulated depreciation is removed from the consolidated financial statements and the net amount, less any proceeds, is included in other income / (loss) on the consolidated statement of operations.

The Company is deemed to be the owner, for accounting purposes, during the construction phase of certain long-lived assets under build-to-suit lease arrangements because of its involvement with the construction, its exposure to any potential cost overruns and its other commitments under the arrangements. In these cases, the Company recognizes a build-to-suit lease asset under construction and a corresponding build-to-suit lease liability on the consolidated balance sheets.

Upon completion of construction, the Company evaluates the de-recognition of the asset and liability under the provisions of ASC 840-40 Leases – Sales-Leaseback Transactions. Where the lease does not meet the criteria for sale-leaseback accounting treatment, due to the continuing involvement in the project resulting from the significant collateral we provided to the landlord in the form of building improvements, the Company accounts for the lease as a financing obligation. Under the financing obligation, the deemed value of the building is capitalized as property, plant and equipment with an offsetting financing obligation on the consolidated balance sheets. The asset is then depreciated over the building's estimated useful life. At the end of the lease term, the Company will de-recognize both the net book values of the building and financing obligation.

Cost Method Investment

The Company owns non-marketable equity securities that are accounted for under the cost method because the preferred stock is not considered in-substance common stock and the preferred stock does not have a readily determinable fair value. All investments are reviewed on a regular basis for possible impairment. If an investment's fair value is determined to be less than its net carrying value and the decline is determined to be other-than-temporary, the investment is written down to its fair value. Such an evaluation is judgmental and dependent on specific facts and circumstances. Factors considered in determining whether an other-than-temporary decline in value has occurred include: market value of the investment based on most recent rounds of financing by the investee, length of time that the market value was below its cost basis, financial condition and business prospects of the investee, the Company's intent and ability to retain the investment for a sufficient period of time to allow for recovery in market value of the investment, issues that raise concerns about the investee's ability to continue as a going concern, and any other information that the Company may be aware of related to the investment.

Intangible Assets

Intangible assets consist of the cost of reacquiring a technology license in the asset purchase of Inex Bio. The Company calculates amortization expense for acquired technology licenses using the straight-line method over the estimated useful lives, which is 4 years.

Patents

The Company expenses patent costs, including related legal costs, as incurred and records such costs within general and administrative expenses on the consolidated statements of operations.

Impairments

The Company's long-lived assets include property, plant and equipment and intangible assets. The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparison of the carrying amount to the future net cash

flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected undiscounted future cash flows arising from the asset using a discount rate determined by management to be commensurate with the risk inherent to the Company’s current business model. There were no impairment losses recognized during the years ended December 31, 2017, 2016 and 2015.

Fair Value of Financial Instruments

The accounting standard for fair value measurements provides a framework for measuring fair value and requires disclosures regarding fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, based on the Company's principal or, in absence of a principal, most advantageous market for the specific asset or liability.

The Company uses a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis, as well as assets and liabilities measured at fair value on a non-recurring basis, in periods subsequent to their initial measurement. The hierarchy requires the Company to use observable inputs when available, and to minimize the use of unobservable inputs, when determining fair value.

The three tiers are defined as follows:

- Level 1—Observable inputs that reflect quoted market prices (unadjusted) for identical assets or liabilities in active markets at the measurement date. Since valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these products does not entail a significant degree of judgment. The Company's Level 1 assets consist of bank deposits and money market funds.
- Level 2—Observable inputs other than quoted prices in active markets that are observable either directly or indirectly in the marketplace for identical or similar assets and liabilities. The Company's Level 2 assets consist of corporate debt securities including commercial paper, government sponsored securities and corporate bonds, as well as foreign municipal securities.
- Level 3— Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

During the years ended December 31, 2017, 2016 and 2015, no transfers were made into or out of the Level 1, 2 or 3 categories. The Company will continue to review the fair value inputs on a quarterly basis.

The Company utilizes a third-party pricing service to assist in obtaining fair value pricing for investments. Inputs are documented in accordance with the fair value disclosure hierarchy.

Until the second quarter of 2015, we had common stock warrants that met the definition of derivative financial instruments and were accounted for as a derivative liability. The fair value of this warrant derivative liability was based on a Monte Carlo simulation model at each reporting period. Estimating the fair value of the underlying shares was highly complex and subjective because our stock was not publicly traded at the time. The derivative warrant liability was settled upon the exercise of the underlying warrants in the second quarter of 2015.

Preclinical and Clinical Trial Accruals

As part of the process of preparing the financial statements, the Company is required to estimate expenses resulting from obligations under contracts with vendors, clinical research organizations and consultants. The financial terms of these contracts vary and may result in payment flows that do not match the periods over which materials or services are provided under such contracts.

The Company estimates clinical trial and research agreement related expenses based on the services performed, pursuant to contracts with research institutions and clinical research organizations and other vendors that conduct clinical trials and research on the Company's behalf. In accruing clinical and research related fees, the Company estimates the time period over which services will be performed and activity expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, the Company will adjust the accrual accordingly. Payments made to third parties under these arrangements in advance of the receipt of the related services are recorded as prepaid expenses until the services are rendered.

Transactions with Related Parties

As outlined in Note 9, the Company has various agreements with different related parties. Some are billed and settled in cash monthly. Others are billed quarterly and settled in cash the following month. Monthly accruals are made for all quarterly billing arrangements.

Lease Obligations

The Company categorizes leases at their inception as either operating or capital leases. On certain lease agreements, the Company may receive rent holidays and other incentives. The Company recognizes lease costs on a straight-line basis without regard to deferred payment terms, such as rent holidays that defer the commencement date of required payments. Additionally, incentives the Company receives for leases categorized as operating leases are treated as a reduction of cost over the term of the agreement.

The Company establishes assets and liabilities for the estimated construction costs incurred under build-to-suit lease arrangements to the extent the Company is involved in the construction of structural improvements or takes construction risk prior to commencement of a lease. Upon occupancy of facilities under build-to-suit leases, the Company assesses whether these arrangements qualify for sales recognition under the sale-leaseback accounting guidance. If the Company continues to be the deemed owner, the facilities are accounted for as financing leases.

Income Taxes

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial reporting and tax basis of assets and liabilities, as well as for operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using the tax rates that are expected to apply to taxable income for the years in which those tax assets and liabilities are expected to be realized or settled. The Company records valuation allowances to reduce deferred tax assets to the amount the Company believes is more likely than not to be realized.

The Company recognizes uncertain tax positions when the positions will be more likely than not upheld on examination by the taxing authorities based solely upon the technical merits of the positions. The Company recognizes interest and penalties, if any, related to unrecognized income tax uncertainties in income tax expense. The Company did not have any accrued interest or penalties associated with uncertain tax positions as of December 31, 2017 and 2016.

The Company is subject to U.S. federal income tax, as well as income tax in Korea, California and other states. The federal returns for tax years 2014 through 2017 remain open to examination; the California returns remain subject to examination for tax years 2013 through 2017. Carryforward attributes that were generated in years where the statute of limitations is closed may still be adjusted upon examination by the Internal Revenue Service or other respective tax authority. All other state jurisdictions remain open to examination. No income tax returns are currently under examination by taxing authorities.

Stock Repurchases

In November 2015, the board of directors approved a share repurchase program (2015 Share Repurchase Program) allowing the CEO or CFO, on behalf of the Company, to repurchase from time to time, in the open market or in privately negotiated transactions, up to $50.0 million of the Company’s outstanding shares of common stock, exclusive of any commissions, markups or expenses. The timing and amounts of any purchases will be based on market conditions and other factors, including price, regulatory requirements and other corporate considerations. The 2015 Share Repurchase Program does not require the purchase of any minimum number of shares and may be suspended, modified or discontinued at any time without prior notice. The Company expects to finance the purchases with existing cash balances. As it is the intent for the repurchased shares to be retired, the Company has elected to account for the shares repurchased under the constructive retirement method. For shares repurchased in excess of par, the Company will allocate the excess value to accumulated deficit.

Revenue Recognition and Deferred Revenue

The Company derives substantially all of its revenue from non-exclusive license agreements with numerous pharmaceutical and biotechnology companies granting them the right to use the Company's cell lines and intellectual property for non-clinical use. These license agreements generally include nonrefundable upfront fees and annual research license fees for such use, as well as commercial fees for sales of the licensees' products developed or manufactured using the Company's intellectual property and cell lines. The Company's license agreements also may include milestone payments, although to date, the Company has not generated any revenue from milestone payments. The Company recognizes revenue when (i) persuasive evidence of an arrangement exists; (ii) delivery of the products and/or services has occurred; (iii) the fees are fixed or determinable; and (iv) collectability is reasonably assured.

When entering into an arrangement, the Company first determines whether the arrangement includes multiple deliverables and is subject to accounting guidance in Accounting Standards Codification (ASC) Subtopic 605-25, Multiple-Element Arrangements. If the Company determines that an arrangement includes multiple elements, it determines whether the arrangement should be divided into separate units of accounting and how the arrangement consideration should be measured and allocated among the separate units of accounting.

An element qualifies as a separate unit of accounting when the delivered element has standalone value to the customer. The Company's agreements do not include a general right of return relative to delivered elements. Any delivered elements that do not qualify as separate units of accounting are combined with other undelivered elements within the arrangement as a single unit of accounting. If the arrangement constitutes a single combined unit of accounting, the Company determines the revenue recognition method for the combined unit of accounting and recognizes the revenue over the period from inception through the date the last deliverable within the single unit of accounting is delivered.

License rights and non-contingent deliverables, such as knowledge transfer, do not have standalone value as they are not sold separately and they cannot be resold and, consequently are considered a single unit of accounting. Therefore, license revenue in the form of upfront payments is deferred and recognized over the applicable period of the Company's substantive performance obligations or the period the rights granted are in effect.

The Company recognizes a milestone payment when earned if it is substantive and the Company has no ongoing performance obligations related to the milestone. A milestone payment is considered substantive if it 1) is commensurate with either the Company's performance to achieve the milestone or the enhanced value of the delivered item as a result of a specific outcome resulting from the Company's performance to achieve the milestone; 2) relates solely to past performance; and 3) is reasonable relative to all of the deliverables and payment terms, including other potential milestone consideration within the arrangement.

The Company records any amounts received prior to satisfying the revenue recognition criteria as deferred revenue on the accompanying consolidated balance sheets.

Research and Development Costs

Major components of research and development costs include cash compensation, stock-based compensation, depreciation and amortization expense on research and development property and equipment and intangible assets, costs of preclinical studies, clinical trials and related clinical manufacturing, costs of drug development, costs of materials and supplies, facilities cost, overhead costs, regulatory and compliance costs, and fees paid to consultants and other entities that conduct certain research and development activities on the Company's behalf. Costs incurred in research and development are expensed as incurred.

Stock-Based Compensation

The Company accounts for stock-based compensation expense related to stock options granted to employees and members of its board of directors by estimating the fair value of each stock option on the date of grant using the Black-Scholes options-pricing model. For awards subject to service-based vesting conditions, stock-based compensation expense is recognized over the vesting period using the straight-line method. The fair value of restricted stock units is determined by the closing market price of the Company's common stock on the date of grant and is also recognized over the vesting period using the straight-line method.

For performance-based awards to employees (i) the fair value of the award is determined on the grant date, (ii) the Company assesses the probability of the individual milestones under the award being achieved, and (iii) the fair value of the shares subject to the milestone is expensed over the service period commencing once management believes the performance criteria is probable of being met.

The Company also accounts for equity instruments issued to non-employees using a fair value approach under ASC Subtopic 505-50, Equity-Based Payments to Non-Employees. The Company adjusts the values of the restricted stock units and stock options granted based on the underlying Company stock price at the end of each quarter. Stock options adjustments are made via the Black-Scholes option-pricing model. The adjusted value of non-employee stock-based compensation is recognized as an expense over the period over which services are received.

In the third quarter of 2017, the Company implemented Financial Accounting Standards Board (FASB) issued Accounting Standard Update 2017-09 (ASU 2017-09) Stock Compensation (Topic 718): Scope of Modification Accounting. This guidance determines which changes to the terms and conditions of share-based payment awards require an entity to apply modification accounting. The adoption of this guidance had no impact to our consolidated financial statements.

In the second quarter of 2016, the Company implemented FASB ASU 2016-09, Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. Therefore, the Company is accounting for share-based award forfeitures only as they occur rather than applying an estimated forfeiture rate.

Litigation Costs

We expense legal fees as they are incurred.

Comprehensive Loss

Comprehensive loss is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Comprehensive loss is composed of net loss and other comprehensive loss. The Company's other comprehensive loss consists of unrealized gains and losses on marketable securities classified as available-for-sale.

Basic and Diluted Net Loss per Share of Common Stock

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

For all periods presented, potentially dilutive securities are excluded from the computation of fully diluted loss per share as their effect is anti-dilutive. The following table details those securities that have been excluded from the computation of potentially dilutive securities:

	As of December 31,		
	2017	2016	2015
Outstanding options	5,693,250	6,307,386	8,777,893
Outstanding restricted stock units	888,189	814,456	1,129,638
Outstanding warrants	17,721,088	17,768,314	17,819,616
Total	24,302,527	24,890,156	27,727,147

Amounts in the table above reflect the common stock equivalents of the noted instruments.

Segment and Geographic Information

Operating segments are defined as components of an enterprise (business activity from which it earns revenue and incurs expenses) for which discrete financial information is available and regularly reviewed by the chief operating decision maker in deciding how to allocate resources and in assessing performance. The Company’s chief operating decision maker (CODM) is its CEO. The Company views its operations and manages its business as a single operating and reporting segment. All assets of the Company were held in the United States as of December 31, 2017, 2016 and 2015.

Although all operations are based in the United States, the Company generated a portion of its revenue in prior years from customers outside of the United States. Information about the Company’s revenue from the different geographic regions for the years ended December 31, 2017, 2016 and 2015 is as follows (in thousands):

	For the Year Ended

	December 31,		
	2017	2016	2015
United States	$45	$ 44	$191
Europe	—	—	21
Other non-U.S.	—	—	24
Total	$45	$ 44	$236

Recent Accounting Pronouncements

Application of New or Revised Accounting Standards – Not Yet Adopted

In November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. This guidance requires restricted cash and restricted cash equivalents to be included with the cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the consolidated statement of cash flows. ASU 2016-18 is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted, but the Company does not plan to adopt early. The evaluation of ASU 2016-18 has been completed and the adoption will not have a significant impact on the Company’s consolidated financial statements and disclosures.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Payments. This standard provides classification guidance for eight types of cash receipts and payments shown on the consolidated statement of cash flows, including proceeds from the settlement of insurance claims. ASU 2016-15 is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. Early adoption is permitted, but the Company does not plan to adopt early. The evaluation of ASU 2016-15 has been completed and the adoption will not have a significant impact on the Company's consolidated financial statements and disclosures.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. This new guidance is intended to present credit losses on available for sale debt securities as an allowance rather than as a write-down. ASU 2016-13 is effective for annual reporting periods, including interim periods within those annual periods, beginning after December 15, 2019, with early adoption permitted for those fiscal years beginning after December 15, 2018. Adoption of ASU 2016-13 is not expected to have a significant impact on the Company's consolidated financial statements and disclosures.

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires lessees to recognize assets and liabilities for operating leases with lease terms greater than twelve months in the balance sheet. The update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted. The Company is currently evaluating the impact of the adoption of ASU 2016-02 on its financial statements and disclosures. The adoption is expected to result in a significant increase in the total assets and liabilities reported on the Company's consolidated balance sheet.

In January 2016, the FASB issued ASU 2016-01, Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The new standard principally affects accounting standards for equity investments, financial liabilities where the fair value option has been elected, and the presentation and disclosure requirements for financial instruments. Upon the effective date of the new standard, all equity investments in unconsolidated entities, other than those accounted for using the equity method of accounting, will generally, unless the investment does not have a readily determinable fair value, be measured at fair value through earnings. As a result of ASU 2016-01, effective January 1, 2018, the Company will account for its preferred stock investment in Viracta (investment) as an equity investment rather than cost method investment. Because the Company's investment meets the practicability exception, the fair value will be estimated at its cost minus any impairment, plus or minus changes resulting from observable price changes. Additionally, changes in fair value will be recorded through other income (expense), net on the consolidated statements of operations. Other updates included in the new standard are not expected to have a significant impact on the Company's consolidated financial statements and disclosures.

In May 2014, the FASB issued guidance codified in ASC Topic 606, ASU 2014-09, Revenue Recognition—Revenue from Contracts with Customers, which amends the guidance in former ASC Topic 605, Revenue Recognition, and was initially to be effective beginning January 1, 2017. On August 12, 2015, the FASB issued guidance which defers the effective date of ASC Topic 606 by one year to January 1, 2018 for public companies. This guidance requires that entities recognize revenue to depict the transfer of 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: (1) full retrospective adoption, meaning the standard is applied to all periods presented, or (2) modified retrospective adoption, meaning the cumulative effect of applying the new standard is recognized as an adjustment to the opening retained earnings balance.

The Company's assessment of the new standard's effect on its financial statements is complete based on review of the Company's current contracts with customers. The Company currently believes that the timing of recognizing revenue for its license agreements with customers will not significantly change. The Company's accounting for sales-based royalty payments from its licensing arrangements is not expected to change. However, the new standard no longer requires the transaction price to be fixed or determinable and certain variable consideration, such as event-based milestone payments, might be recognized prior to the occurrence or resolution of the contingent event (subject to a revenue reversal constraint). Given the current uncertainty surrounding these event-based milestone payments and minimal change to the Company's accounting for existing sales-based royalty payments, the Company expects to record an immaterial adjustment to accumulated deficit upon adoption of the standard on January 1, 2018. The Company also expects to adopt the new standard using the modified retrospective approach.

The new standard requires disclosure of quantitative and qualitative information that enables users of financial statements to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The Company expects to expand its existing revenue disclosure upon adoption of the new standard to meet this requirement.

3. Financial Statement Details

Prepaid expenses and other current assets

As of December 31, 2017 and 2016, prepaid expenses and other current assets were made up of (in thousands):

	As of December 31,	
	2017	2016
Interest receivable - marketable securities	$764	$1,484
Prepaid license fees	597	462
Prepaid insurance	572	531
Equipment deposits	482	482
Prepaid services	416	1,191
Prepaid rent	373	360
Insurance claim receivable	340	—
Prepaid supplies	210	—
Prepaid legal fees	—	350
Other	398	275
	$4,152	$5,135

Property, plant and equipment, net

As of December 31, 2017 and 2016, property, plant and equipment was made up of (in thousands):

	As of December 31,	
	2017	2016
Construction in progress	$42,281	$6,939
Buildings	23,811	4,348
Equipment	9,625	5,458
Leasehold improvements	3,918	2,367
Software	1,092	769
Furniture & fixtures	302	203
	81,029	20,084
Accumulated depreciation	(4,303)	(1,178)
	$76,726	$18,906

Depreciation expense related to property, plant and equipment was $3.3 million, $1.0 million and $0.1 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Buildings of $23.8 million are comprised of $19.5 million related to the purchased warehouse and distribution facility in El Segundo, California, originally accounted for as a capital lease (See Note 8 – Capital Lease) and $4.3 million under a financing lease representing the estimated fair market value of the building in Culver City, California, for which the Company is the “deemed owner” for accounting purposes only, and related non-normal tenant improvements. See Note 8 section Financing Lease Obligation.

Construction in progress as of December 31, 2017 includes the estimated fair value of $ 5.1 million for the Company's build-to-suit lease related to its facility in El Segundo, California, for which the Company is the "deemed owner" for accounting purposes only. See Note 8 section Build-to-suit Lease.

Intangible assets, net

As of December 31, 2017 and 2016, intangible assets were made up of (in thousands):

	As of December 31,	
	2017	2016
Technology license	$9,042	$9,042
Less accumulated amortization	(6,216)	(3,956)
	$2,826	$5,086

Amortization expense was $2.3 million, $2.6 million and $1.3 million for the years ended December 31, 2017, 2016 and 2015, respectively. Amortization for the Company's technology license is included in research and development expense on the consolidated statement of operations.

Future estimated amortization expense related to the Company's technology license for the next five years and thereafter is as follows (in thousands):

Years ending December 31:	
2018	2,261
2019	565
2020	—
2021	—
2022	—
Thereafter	—
	$2,826

The remaining amortization period for the technology license is 1.25 years.

Other assets

As of December 31, 2017 and 2016, other assets were made up of (in thousands):

	As of December 31,	
	2017	2016
Restricted cash	$ 179	$ 179
Security deposit	127	137
Other	24	110
Equipment not placed in service	—	362
	$ 330	$ 788

Accrued expenses

As of December 31, 2017 and 2016, accrued expenses were made up of (in thousands):

	As of December 31,	
	2017	2016
Accrued construction costs	$6,212	$1,243
Accrued bonus	1,930	1,732
Accrued professional and service fees	1,048	1,008
Accrued compensation	944	898
Accrued preclinical and clinical trial costs	521	662
Other	612	321
	$11,267	$5,864

Other current liabilities

As of December 31, 2017 and 2016, other current liabilities were made up of (in thousands):

	As of December 31,	
	2017	2016
Deferred rent - current portion	$ 520	$ 197
Build-to-suit lease liability - current portion	334	281
Financing obligation - current portion	284	253
Other	235	160
	$ 1,373	$ 891

Investment income, net

Net investment income includes interest income from all bank accounts as well as marketable securities, dividend income, net realized gains or losses on sales of investments and the amortization of the premiums and discounts of the investments and is as follows for the years ended December 31, 2017, 2016 and 2015 (in thousands).

	For the Year Ended December 31,		
	2017	2016	2015
Interest income	$4,225	$5,168	$312
Investment amortization accretion expense, net	(1,597)	(2,182)	(38)
Dividend income	—	—	213
Net realized gains on investments	37	111	2,501
	$2,665	$3,097	$2,988

The interest income includes interest from the Company’s bank deposits. The Company did not recognize an impairment loss on any investments during the years ended December 31, 2017, 2016 and 2015.

4. Cost Method Investment

In March 2017, the Company participated in a Series B convertible preferred stock financing and invested $8.5 million in Viracta Therapeutics, Inc. (Viracta), a clinical stage drug development company. The Company did not exercise the option to purchase up to an additional $8.5 million worth of shares of the Series B convertible preferred stock by September 30, 2017, the expiration date. In May 2017, the Company executed an exclusive worldwide license with Viracta to develop and commercialize Viracta’s proprietary histone deacetylase inhibitor drug candidate for use in combination with NK cell therapy and possibly additional therapies. See Note 7 for further information regarding the license.

Based on the level of equity investment at risk, Viracta is not a VIE. The Company is not consolidating Viracta, but is accounting for this investment using the cost method because the preferred stock is not considered in-substance common stock and preferred stock does not have a readily determinable fair value. As of December 31, 2017, the Company did not estimate the fair value of this cost method investment as there were no events or changes in circumstances that may have had a significant adverse effect on the fair value of the investment. The $8.5 million cost of the investment is recorded in cost method investment in the consolidated balance sheet as of December 31, 2017.

5. Cash Equivalents and Marketable Securities

As of December 31, 2017, all of the Company's marketable securities are classified as available-for-sale and are scheduled to mature within 3.7 years. At December 31, 2017 and 2016, the Company's cash equivalents and marketable securities are detailed below (in thousands).

	December 31, 2017			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Current:				
Government sponsored securities	$19,261	$ —	$ (28)	$19,233
Corporate debt securities	82,188	5	(84)	82,109
Foreign government bonds	6,441	—	(5)	6,436
Subtotal current	107,890	5	(117)	107,778
Noncurrent:				
Government sponsored securities	2,760	—	(43)	2,717
Corporate debt securities	27,109	—	(226)	26,883
Subtotal noncurrent	29,869	—	(269)	29,600
Total	$137,759	$ 5	$ (386)	$137,378

Included in foreign government bonds is $3.5 million of cash equivalents at December 31, 2017.

	December 31, 2016			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Current:				
Commercial paper	$22,252	$ 21	$ (1)	$22,272
Corporate debt securities	165,605	40	(76)	165,569
Foreign government bonds	5,004	—	(2)	5,002
Subtotal current	192,861	61	(79)	192,843
Noncurrent:				
Government sponsored securities	17,018	2	(38)	16,982
Corporate debt securities	69,414	71	(290)	69,195
Foreign government bonds	1,405	—	(11)	1,394
Subtotal noncurrent	87,837	73	(339)	87,571
Total	$280,698	$ 134	$ (418)	$280,414

Included in corporate debt securities is $2.0 million of cash equivalents at December 31, 2016.

Available-for-sale investments that had been in an unrealized loss position for less than 12 months and for more than 12 months at December 31, 2017 and 2016 are as follows (in thousands):

	December 31, 2017			
	Less than 12 months		More than 12 months	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Government sponsored securities	$9,744	$ (20)	$12,205	$ (51)
Corporate debt securities	67,522	(104)	35,918	(206)
Foreign government bonds	1,542	—	1,396	(5)
Total	$78,808	$ (124)	$49,519	$ (262)

	December 31, 2016			
	Less than 12 months		More than 12 months	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Government sponsored securities	$17,204	$ (39)	$ —	$ —
Corporate debt securities	150,320	(366)	—	—
Foreign government bonds	6,396	(13)	—	—
Total	$173,920	$ (418)	$ —	$ —

At December 31, 2017, 65 of the securities and bonds are in an unrealized loss position. The Company evaluated its securities for other-than-temporary impairment and concluded that the decline in value was primarily caused by current economic and market conditions. The Company does not intend to sell the investments and it is not more likely than not that the Company will be required to sell the investments before recovery of their amortized cost bases. Therefore, the Company did not recognize any other-than-temporary impairment loss during the years ended December 31, 2017, 2016 and 2015.

The Company recorded realized gains and losses on sales or maturities of available-for-sale securities as follows (in thousands):

	Gross Realized Gains	Gross Realized Losses	Net Realized Gains
2017	$ 52	$ (15)	$ 37
2016	190	(79)	111
2015	2,501	—	2,501

6. Fair Value Measurements

Fair value is defined as an exit price that would be received from the sale of an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Authoritative guidance establishes a three-level hierarchy for disclosure that is based on the extent and level of judgment used to estimate the fair value of assets and liabilities.

Recurring Valuations

Financial assets and liabilities measured at fair value on a recurring basis are summarized below at December 31, 2017 and 2016 (in thousands):

	December 31, 2017			
	Total	Level 1	Level 2	Level 3
Assets:				
Current:				
Cash and cash equivalents	$23,872	$20,374	$3,498	$ —
Government sponsored securities	19,233	—	19,233	—
Corporate debt securities	82,109	—	82,109	—
Foreign government bonds	2,938	—	2,938	—
Noncurrent:				
Government sponsored securities	2,717	—	2,717	—
Corporate debt securities	26,883	—	26,883	—
Total assets measured at fair value	$157,752	$20,374	$137,378	$ —

	December 31, 2016			
	Total	Level 1	Level 2	Level 3
Assets:				
Current:				
Cash and cash equivalents	$8,083	$6,078	$2,005	$ —
Government sponsored securities	22,272	—	22,272	—
Corporate debt securities	163,564	—	163,564	—
Foreign government bonds	5,002	—	5,002	—
Noncurrent:				
Government sponsored securities	16,982	—	16,982	—
Corporate debt securities	69,195	—	69,195	—
Foreign government bonds	1,394	—	1,394	—
Total assets measured at fair value	$286,492	$6,078	$280,414	$ —

Non-recurring Valuation

Non-financial assets and liabilities are recognized at fair value subsequent to initial recognition when they are deemed to be other-than-temporarily impaired. There were no material non-financial assets and liabilities deemed to be other-than-temporarily impaired and measured at fair value on a non-recurring basis for the years ended December 31, 2017, 2016 and 2015.

7. Collaboration and License Agreements

Collaborative Arrangements

A collaborative arrangement is a contractual arrangement that involves a joint operating activity. These arrangements involve two or more parties who are (i) active participants in the activity, and (ii) exposed to significant risks and rewards dependent on the commercial success of the activity.

Exclusive Co-Development Agreement

In August 2016, the Company entered into an exclusive Co-Development Agreement (the Co-Development Agreement) with Altor BioScience Corporation (Altor), a related party (Note 9). Under the Co-Development Agreement, the Company and Altor agreed to exclusively collaborate on the development of therapeutic applications combining the Company’s proprietary natural killer cells with Altor's ALT-801 and/or ALT-803 products with respect to certain technologies and intellectual property rights as may be agreed between the parties for the purpose of jointly developing therapeutic applications of certain effector cell lines.

The Company will be the lead developer for each product developed by the parties pursuant to the Co-Development Agreement unless otherwise agreed to under a given project plan. Under the terms of the Co-Development Agreement, both parties grant a co-exclusive, royalty free, fully paid-up, worldwide license, with the right to sublicense (only to a third-party contractor assisting with research and development activities under this Co-Development Agreement and subject to prior consent, not to be unreasonably withheld), under the intellectual property (IP), including the parties interest in the joint IP, solely to conduct any development activities agreed to by the steering committee as set forth in any development plan. Unless otherwise mutually agreed by the parties in the development plan for a project, the Company shall be responsible for all costs and expenses incurred by either party related to conducting clinical trials and other activities under each development program, including costs associated with patient enrollment, materials and supplies, third-party staffing and regulatory filings. Altor will supply free of charge sufficient amounts of Altor products for all pre-clinical requirements and all clinical requirements for up to 400 patients in phase I and/or phase II clinical trials, as required under the development plan for a project per the Co-Development agreement.

Altor and the Company each will own an undivided interest in and to all rights, title and interest in and to the joint product rights. The Co-Development Agreement expires upon the fifth anniversary of the effective date. During the year ended December 31, 2017, the Company has dosed several patients with ALT-803 in its phase II Merkel cell carcinoma and our phase Ib/II pancreatic trials. No charges for supplies or milestones by Altor have been incurred in association with the above trial during the years ended December 31, 2017 and 2016.

Joint Development and License Agreement

In December 2014, the Company entered into a Joint Development and License Agreement with Sorrento Therapeutics, Inc. (Sorrento). The agreement expired in December 2017. Since no joint product candidates were identified during the exclusive term, Sorrento has no rights to use the Company's NK cells or other technologies or intellectual property rights or to begin related research, development or commercialization activities and the Company is free to pursue, and is actively pursuing, research, development and commercialization activities with antibodies that may bind to various targets, including PDL1, CD19 and FLT3.

Royalties and In-licensing Agreements

Viracta License Agreement

In May 2017, the Company entered into an agreement with Viracta to grant the Company exclusive world-wide rights to Viracta's phase II drug candidate, VRx-3996, for use in combination with the Company's platform of natural killer cell therapies. The Company's Chairman and CEO is also the Vice Chairman of Viracta. In consideration for the license, the Company is obligated to pay to Viracta (i) mid-single digit percentage royalties of net sales of licensed products for therapeutic use; and (ii) milestone payments ranging from $10.0 million to $25.0 million for various regulatory approvals and cumulative net sales levels. The Company may terminate the agreement, in its sole discretion, in whole or on a product by product and/or country by country basis, at any time upon 90 days' prior written notice. In addition, either party may terminate the agreement in the event of a material breach or for bankruptcy of the other party.

Chemotherapeutisches Forschungsinstitut Georg-Speyer-Haus (GSH) and DRK-Blutspendedienst Baden-Wurttenberg-Hessen gGmbH (BSD) License Agreement

In August 2015, the Company entered into a license agreement with GSH and BSD under which the Company was granted an exclusive license to certain GSH-BSD patents, materials and know-how that specifically targets ErbB2 expressing cancers. In addition, GSH granted the Company an exclusive license to certain GSH only technology and materials. In consideration for the licenses, the Company agreed to pay initial and annual licensing fees, regulatory and commercial milestones and low single-digit percentage royalties on net sales of licensed products. The royalty

term shall continue in a particular country until the later of (i) the expiration of the valid patent claims in such country, or (ii) a specified period of time after the first commercial sale of licensed product in such country. The license agreement shall continue until no further payments are due at which time the licenses and rights will continue on a non-exclusive, royalty-free basis. The license agreement can be terminated earlier: (i) for material breach by either party after 60 days cure period, (ii) if the Company declares bankruptcy or insolvency, (iii) by the Company in its sole discretion upon 60 days prior written notice. The Company paid and expensed $1.1 million for the initial license fees in 2015 under the license, which was included in research and development expenses on the consolidated statements of operations for the year ended December 31, 2015. Annual license fees under the agreement begin in 2018.

During the third quarter of 2017, GSH reached the first regulatory milestone of a receipt of the first Institutional Review Board (IRB) approval for the phase I glioblastoma study. The Company expensed $0.9 million for the first milestone payment under the agreement, which is included in research and development expenses on the consolidated statements of operations for the year ended December 31, 2017. No expense was recognized in 2016.

Fox Chase Cancer Center License Agreement

In 2004 and amended in 2008, the Company entered into an exclusive license agreement with Fox Chase Cancer Center (Fox Chase) for the exclusive, worldwide right to certain patents and know-how pertaining to CD16 receptors bearing NK-92 cell lines. In consideration for this exclusive license, the Company agreed to pay Fox Chase (i) low single-digit percentage royalties on net sales of licensed products for therapeutic and diagnostic use; and (ii) mid-twenties percentage royalties on any compensation the Company receives from sublicensees.

The Fox Chase license was assigned to Brink Biologics as a part of the Spin-out (Note 10). As a result, the Company recorded no royalty expense for the years ended December 31, 2017 and 2016. The Company recorded royalty expense of $0.1 million for the year ended December 31, 2015 related to the Fox Chase Cancer Center License Agreement for the period of time before the Spin-out. Royalty expense is included in selling, general and administrative on the consolidated statements of operations.

Rush University Medical Center License Agreement

In 2004, the Company entered into a 12-year licensing agreement with Rush University Medical Center for the exclusive rights to license and grant sublicenses of certain intellectual property related to clinical use of NK-92. The Company is required to pay low to mid-single digit percentage royalties on net sales depending upon the various fields of studies and other factors. The Company is required to pay a minimum annual royalty of $25,000. The Rush University Medical Center License Agreement also provides for payments in the aggregate amount of $2.5 million upon the Company achieving various milestones, including upon (i) the completion of phase II clinical trial associated with the licensed intellectual property; (ii) the approval by the Food and Drug Administration (the FDA) of a new drug application for a licensed product; and (iii) the first year that sales of the licensed product equals or exceeds $0.3 million. The Rush University Medical Center License Agreement terminates on the 12th anniversary of the first payment of royalties, which occurred in 2006, at which point the license is deemed a perpetual, irrevocable, fully-paid royalty-free, exclusive license, and may be terminated earlier by either party for material breach.

During the years ended December 31, 2017, 2016 and 2015, the Company recorded royalty expense of $25,000 each year, related to the Rush University Medical Center License Agreement. Royalty expense is included in selling, general and administrative on the consolidated statements of operations. No milestones were met during the years ended December 31, 2017, 2016 and 2015.

Out-Licensing Agreement

Intrexon License Agreement

In February 2010, the Company entered into a 17-year license agreement with Intrexon Corporation (Intrexon) pursuant to which the Company granted to Intrexon a non-exclusive, worldwide, sublicensable license to research and sell products under certain patents relating to modified NK-92 cells that express Intrexon’s proprietary gene sequences for use as a therapeutic and prophylactic agent in humans in specified therapeutic areas. In consideration for the license agreement, Intrexon paid the Company a one-time fee of $0.4 million, which was recorded in deferred revenue and is amortized over the term of the license agreement. Intrexon will pay the following milestone payments: $0.1 million upon the first IND filing; $0.1 million upon the commencement of the first phase II clinical trial; $0.4 million upon the commencement of the first phase III clinical trial; and $0.5 million upon the first commercial sale relating to the licensed products. Intrexon is obligated to pay the Company a low single digit percentage royalty based on net sales of the licensed products by Intrexon and a mid-teen percentage royalty based on revenues received by Intrexon in connection with sublicenses of the licensed products. No milestone payments were due or received in the years ended December 31, 2017, 2016 and 2015, and, therefore, the Company recorded no milestone revenue for any of those years on the consolidated statements of operations.

8. Commitments and Contingencies

Contingencies

The Company records accruals for loss contingencies to the extent that the Company concludes 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 a change in the potential amount of the liability recorded or of the range of potential losses disclosed. Additionally, the Company has reflected its right to insurance recoveries, limited to the extent of incurred or probable losses, as a receivable when such recoveries have been agreed to with its third-party insurers and receipt is deemed probable. This includes instances where the Company's third-party insurers have agreed to reimburse certain legal defense costs incurred with the applicable law firms by the Company.

Securities Litigation

In March 2016, a putative securities class action complaint captioned Sudunagunta v. NantKwest, Inc., et al., No. 16-cv-01947 was filed in federal district court for the Central District of California related to the Company's restatement of certain interim financial statements for the periods ended June 30, 2015 and September 30, 2015. A number of similar putative class actions were filed in federal and state court in California. The actions originally filed in state court were removed to federal court, and the various related actions have been consolidated. Plaintiffs assert causes of action for alleged violations of Sections 11 and 15 of the Securities Act of 1933 and Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Rule 10b-5 promulgated thereunder. Plaintiffs seek unspecified damages, costs and attorneys' fees, and equitable/injunctive or other relief on behalf of putative classes of persons who purchased or acquired the Company's securities during various time periods from July 28, 2015 through March 11, 2016. In September 2017, the court denied defendants' motion to dismiss the third amended consolidated complaint. No trial date has been set. Management intends to vigorously defend these proceedings. At this time, the Company cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. Therefore, based on the information available at present, the Company cannot reasonably estimate a range of loss for this action. Should the Company ultimately be found liable, the liability could have a material adverse effect on the Company's results of operations for the period or periods in which it is incurred.

On September 6, 2016, a putative shareholder derivative complaint captioned Bushansky v. Soon-Shiong, et al., No. 37-2016-00030867-CU-SL-CTL was filed in California Superior Court, San Diego County also related to the Company's restatement of certain interim financial statements. The complaint named as defendants the Company's directors and outside auditor at the time of the IPO. The Company is named solely as a nominal defendant. The complaint alleges the directors breached their fiduciary duties to the Company and wasted corporate assets, and that the outside auditors committed malpractice. The complaint seeks, on behalf of the Company, unspecified damages, the return of directors' salaries for unspecified periods, and injunctive relief. At this time, the Company cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. In April 2017, the court entered a written order of dismissal after granting the Company's motion to dismiss the California complaint based on a corporate charter provision specifying a Delaware forum. Plaintiffs have filed a notice of appeal. Should the Company ultimately be found liable, the liability could have a material adverse effect on the Company's results of operations for the period or periods in which it is incurred.

In October 2017, the first of two putative stockholder derivative complaints was filed in the Delaware Court of Chancery. The Delaware actions have been consolidated as In re NantKwest, Inc. Derivative Litigation, Cons. C.A. No. 2017-0774- VCL. A consolidated complaint was filed asserting that various of the Company's current and former directors and officers breached their fiduciary duties to the Company based on factual allegations similar to those in the Sudunagunta and Bushansky actions. The complaint seeks damages and other relief on behalf of the Company, which is named solely as a nominal defendant. On February 5, 2018, the defendants filed a motion to dismiss the consolidated complaint. At this time, the Company cannot predict how the Court will rule on the merits of the claims and/or the scope of the potential loss in the event of an adverse outcome. Therefore, based on the information available at present, the Company cannot reasonably estimate a range of loss for this action. Should the Company ultimately be found liable, the liability could have a material adverse effect on the Company's results of operations for the period or periods in which it is incurred.

The Company has reflected its right to insurance recoveries, limited to the extent of incurred or probable losses, as a receivable when such recoveries have been agreed to with its third-party insurers and receipt is deemed probable. This includes instances where the Company's third-party insurers have agreed to reimburse certain legal defense costs incurred with applicable law firms by the Company. The amount of such receivable recorded at December 31, 2017 was $0.3 million included in prepaid expenses and current assets on the Company's consolidated balance sheet.

Appeal of USPTO Decision

In March 2009, the Company received a final rejection in one of the Company's original patent applications pertaining to certain limited methods of use claims for NK-92 from the U.S. Patent and Trademark Office (the USPTO), but the USPTO allowed claims on all of the other proposed claims, including other methods of use. The Company appealed this decision with the USPTO Board of Appeals and, in the fall of 2013, the Board of Appeals reversed the Examiner's rejection of the claim to certain limited methods of use with NK-92, but affirmed the Examiner's rejection of the remaining patent claims. In December 2013, the Company brought an action in the U.S. District Court for the Eastern District of Virginia to review the decision of the USPTO as the Company disagreed with the decision as to the certain limited non-allowed claims. On September 2, 2015, the U.S. District Court granted the USPTO's motion for summary judgment. On September 24, 2015, the Company filed a notice of appeal to the United States Court of Appeals for the Federal Circuit. In September 2015, the USPTO filed a Motion for Expenses seeking $0.1 million for attorney's fees and the USPTO's expert witness fees. In February 2016, the U.S. District Court denied the USPTO's Motion for Expenses for attorney's fees and granted Director's Motion for Expenses for the USPTO's expert witness fees. The USPTO filed a notice of appeal on April 5, 2016. In May 2017, the Federal Circuit affirmed the U.S. District Court's summary judgment ruling. The formal mandate was issued on June 26, 2017. In June 2017, the Federal Circuit reversed the U.S. District Court and remanded the case for the U.S. District Court to enter an award of $0.1 million in favor of the USPTO. On August 31, 2017, a majority of active Federal Circuit judges voted to vacate the June 2017 decision and hear the case en banc sua sponte. The USPTO filed its opening brief on November 15, 2017. The Company filed its opening brief on January 16, 2018. The USPTO filed its reply brief on January 31, 2018. Oral argument was heard on March 8, 2018. Based on the information available at present, the Company cannot reasonably estimate a range of loss for this action beyond the attorney and expert witness fees. Accordingly, the awarded fees have been accrued, but no liability associated with this action beyond the fees has been accrued. The Company is expensing legal costs associated with defending this litigation as the costs are incurred.

Contractual Obligations - Leases

The Company leases: (i) office space in Cardiff-by-the-Sea, California; (ii) a research and office facility in Woburn, Massachusetts; (iii) office space in Cary, North Carolina; (iv) a research and office facility in San Diego, California; (v) research and manufacturing space in Culver City, California from a related party (Note 9) and; (vi) a research and manufacturing facility in El Segundo, California, also from a related party (Note 9).

Capital Lease

In April 2017, the Company entered into an agreement to purchase a commercial building with approximately 36,434 square feet, located in El Segundo, California. The Company intends to use this facility as a warehouse and distribution facility as it is adjacent to the El Segundo, California, research and manufacturing facility. Upon the execution of the purchase agreement, the Company made a deposit of $5.0 million to the escrow holder and entered into a lease agreement related to this facility commencing on May 1, 2017. There was no monthly base rent under the lease. The escrow closed in September 2017 and the Company paid the remaining purchase price, including closing costs, of $15.3 million and terminated the lease agreement.

The Company had a bargain purchase option to purchase the building upon termination of the escrow period and, initially, accounted for the lease as a capital lease. Upon purchase of the building in September 2017, which resulted in the termination of the capital lease, the Company accounted for the transaction as a single transaction and the carrying amount of the asset was adjusted for any differences between the carrying amount of the lease obligation and the initial carrying amount of the asset.

Build-to-suit Lease

In September 2016, the Company entered into a lease agreement with 605 Doug St, LLC, a related party (Note 9), for approximately 24,250 square feet in El Segundo, California, which is to be converted to a research and development laboratory and a current Good Manufacturing Practices (cGMP) laboratory. The lease runs from July 2016 through July 2023. The Company has the option to extend the lease for an additional three year term through July 2026. The monthly rent is $0.1 million with annual increases of 3% beginning in July 2017. For the years ended December 31, 2017 and 2016, the Company recorded rent expense of $0.2 million and $0.1 million, respectively, which is reflected in research and development expense on the consolidated statement of operations.

The Company is responsible for costs to build out the laboratory and has incurred costs of approximately $30.0 million as of December 31, 2017, which is reflected in construction in progress as part of property, plant and equipment, net on the consolidated balance sheet. Additionally, in order for the facility to meet the Company's research and development and cGMP laboratory specifications, the Company is making certain structural changes to the facility as part of the conversion to laboratory space. As a result of these changes, the Company concluded that it is the “deemed owner” of the building (for accounting purposes only) during the construction period. Accordingly, the Company recorded a non-cash build-to-suit lease asset of $5.1 million, representing its estimate of the fair market value of the building, and a corresponding construction build-to-suit lease liability, recorded as a component of other current and non-current liabilities on the consolidated balance sheet as of December 31, 2017.

Upon completion of construction of this facility, the Company evaluates the de-recognition of the asset and liability under the provisions of ASC 840-40, Leases - Sale-Leaseback Transactions. However, if the Company does not comply with the provisions needed for sale-leaseback accounting, the lease will be accounted for as a financing obligation and lease payments will be attributed to (1) a reduction of the principal financing obligation; (2) imputed interest expense; and (3) land lease expense (which is considered an operating lease and a component of research and development expenses) representing an imputed cost to lease the underlying land of the facility. In addition, the underlying building asset will be depreciated over the building's estimated useful life, which is estimated at 39 years. At the conclusion of the lease term, the Company would de-recognize both the net book values of the asset and financing obligation.

Financing Lease Obligation

In November 2015, the Company entered into a facility license agreement with NantWorks (Note 9) for approximately 9,500 square feet of office space in Culver City, California, which has been converted to a research and development laboratory and a cGMP laboratory. The license was effective in May 2015 and extends through December 2020. The Company has the option to extend the license through December 2023. The monthly license fee is $47,000 with annual increases of 3% beginning in January 2017. The Company records the rent payments as (1) a reduction of the financing obligation; (2) imputed interest expense; and (3) rent expense on the imputed cost to lease the underlying land of the facility, which is considered an operating lease. For the years ended December 31, 2017, 2016 and 2015, the Company recorded rent expense of $0.2 million, $0.2 million and $0.2 million, respectively, which is reflected in research and development expense on the consolidated statement of operation.

Under the facility license agreement, the Company was responsible for costs to build out the laboratory and incurred costs of approximately $3.5 million. The Company concluded that it was the “deemed owner” of the building (for accounting purposes only) during the construction period. The Company recorded the build out costs as an asset with a corresponding build-to-suit liability, which was recorded as a component of other current and non-current liabilities on the consolidated balance sheet while the building was under construction.

Upon completion of construction of this building in August 2016, the Company evaluated the de-recognition of the asset and liability under the provisions of ASC 840-40, Leases – Sale-Leaseback Transactions. The Company determined that the lease does not meet the criteria for sale-leaseback accounting treatment, due to the continuing involvement in the project resulting from the significant collateral the Company provided to the landlord in the form of building improvements. As a result, the building is being accounted for as a financing obligation. The underlying assets of $4.3 million are depreciated over the building’s estimated useful life, which is 39 years. At the conclusion of the lease term, the Company will de-recognize both the net book values of the assets and financing obligation.

Operating Leases

In March 2016, the Company entered into a lease agreement for an approximately 7,893 square foot facility in Woburn, Massachusetts, for a research and development laboratory, related office and other related uses. The term of the lease is 48 months commencing on April 29, 2016. In June 2016, the lease was amended to add 260 square feet,

for a total of 8,153 square feet. The base rent, including the amendment, is $19,000 per month with a $1 per square foot annual increase on each anniversary date.

In July 2015, the Company entered into an agreement for approximately 3,067 square feet of office space in Cary, North Carolina. The lease expired as of December 31, 2017, and the Company vacated the premises.

In June 2015, the Company entered into a lease agreement for an approximately 44,700 square foot facility in San Diego, California, for a research and development laboratory, related office and other related uses. The term of the lease extends for seven years commencing on August 1, 2016. The base rent is $0.2 million per month with 3% annual increases on each anniversary date. In July 2015, the Company entered into a sublease for the building with the then existing lessee for a term of one year commencing August 1, 2015. There was no fixed rent or operating expenses during the sublease term other than utilities. The Company is currently subleasing approximately 8,500 square feet of the premises to related parties (Note 9).

The Company leases a total of approximately 2,550 square feet of office space in Cardiff-by-the-Sea, California, for general office use, pursuant to an operating lease. The lease term was extended through August 31, 2018. Our total monthly lease payment is currently $13,200 per month. In August 2017, the Company subleased these premises for the remainder of the lease term for the same payment.

The Company recognizes rent expense under operating leases on a straight-line basis. Rent expense for the years ended December 31, 2017, 2016 and 2015 was $2.7 million, $2.7 million, $1.5 million, respectively.

The following table summarizes our future minimum lease payments at December 31, 2017 (in thousands). Common area maintenance costs and taxes are not included in these payments.

Years ending December 31:	
2018	$4,094
2019	4,108
2020	4,056
2021	3,435
2022	3,538
Thereafter	2,056
Total minimum lease payments	$21,287

9. Related Party Agreements

The Company had related party agreements with Inex Bio, Inc. (Inex Bio) until the Company acquired a majority of Inex Bio shares. See Note 15 – Investment in Inex Bio, Inc. for further details.

In June 2015, the Company spun out Brink Biologics, Inc. (Brink Biologics) and Coneksis, Inc. (Coneksis) (Note 10). The Company's Chairman and CEO has a controlling interest in Brink Biologics and Coneksis.

The Company's Chairman and CEO founded and has a controlling interest in NantWorks, Inc. (NantWorks), which is a collection of multiple companies in the healthcare and technology space. The Company has entered into arrangements with NantWorks and certain affiliates of NantWorks, as described below, to facilitate the development of new genetically modified NK cells for the Company's product pipeline.

John Lee, M.D. and Leonard Sender, M.D., Inc., a professional medical corporation, dba Chan Soon-Shiong Institutes for Medicine (CSSIM)

In 2017, the Company entered into multiple agreements with John Lee, M.D. and Leonard Sender, M.D., Inc., a professional medical corporation, dba Chan Soon-Shiong Institutes for Medicine (CSSIM), in El Segundo, California, to conduct various clinical trials. CSSIM is a related party as it is owned by two officers of the Company and NantWorks provides administrative services to CSSIM. One of the Company's officers is the principal investigator for the trials on behalf of CSSIM. During the year ended December 31, 2017, $0.8 million has been recognized in research and development expense on the consolidated statement of operations. As of December 31, 2017, the Company owes CSSIM $0.8 million, which is included in due to related parties on the consolidated balance sheet.

Tensorcom, Inc.

In April 2017, the Company entered into a sublease agreement with Tensorcom, Inc. (Tensorcom) related to its San Diego, California, research and development laboratory and office space, with an initial lease from May 1, 2017

through April 30, 2018. The Company's Chairman and CEO indirectly owns all of the outstanding equity of Tensorcom. The sublease agreement converts to a month-to-month lease after the initial lease term, not to exceed the expiration of the lease agreement between the Company and the third party landlord. After the initial term, the sublease agreement can be terminated by either party by providing a thirty day written notice. The sublease includes a portion of the premises consisting of approximately 6,557 rentable square feet of space. The monthly base rent is $25,000 per month, with an annual 3% increase. For the year ended December 31, 2017, the Company recognized $0.2 million in other income on the consolidated statement of operations under the sublease agreement. At December 31, 2017, there was no balance due between the parties.

VivaBioCell S.p.A.

In February 2017, the Company entered into a research grant agreement with VivaBioCell S.p.A. (VBC), an affiliated company of NantWorks, under which VBC will conduct research and development activities related to the Company's NK cell lines using VBC's proprietary technology. The Company paid $0.6 million to VBC, which is recorded in prepaid expenses and other current assets on the consolidated balance sheet, and expects to benefit from the research and development activities over a one year timeframe. For the year ended December 31, 2017, $0.6 million has been recognized in research and development expense on the consolidated statement of operations and prepaid expenses and other current assets on the consolidated balance sheet has been reduced by that amount.

605 Doug St. LLC

In September 2016, the Company entered into a lease agreement with 605 Doug St, LLC, an entity owned by the Company's Chairman and CEO, for approximately 24,250 square feet in El Segundo, California, which is to be converted to a research and development laboratory and a cGMP laboratory. The lease runs from July 2016 through July 2023. The Company has the option to extend the lease for an additional three year term through July 2026. The monthly rent is $0.1 million with annual increases of 3% beginning in July 2017. See Note 8 section Build-to-Suit Lease for further details on this lease. For the years ended December 31, 2017 and 2016, the Company recorded rent expense of $0.2 million and $0.1 million, respectively, which is reflected in research and development expense on the consolidated statement of operations. At December 31, 2017, no balance was due between the parties.

Altor

In August 2016, the Company entered into a Co-Development Agreement with Altor as described in Note 7. The Company's Chairman and CEO is also the Chairman of Altor. Altor is a wholly owned subsidiary of NantCell Inc. (NantCell), and the Company's Chairman and CEO is also the Chairman and CEO of NantCell and holds a greater than 20% ownership interest in Altor. No charges for supplies or milestones by Altor have been incurred in association with the above trial during the years ended December 31, 2017 and 2016.

NantBio, Inc.

In January 2018, the Company entered into a laboratory services agreement with NantBio, Inc. (NantBio) a NantWorks company. The agreement, effective December 1, 2017, includes a sublease of approximately 1,965 square feet of laboratory and office space at the Company's San Diego, California, research facility. The term of the sublease is 24 months, but can be terminated by either party with 30 days prior written notice. The sublease agreement converts to a month-to-month lease after the initial term, not to exceed the expiration of the lease agreement between the Company and the landlord. The monthly sublease and service fee of $10,000 is subject to an annual 3% increase on the agreement anniversary date. The Company recognized $10,000 in other income on the consolidated statement of operations for the year ended December 31, 2017. At December 31, 2017, NantBio owes the Company $0.1 million.

In March 2016, NantBio and the National Cancer Institute entered into a cooperative research and development agreement. The agreement covers NantBio and its affiliates, including the Company. Under the agreement, the parties are collaborating on the preclinical and clinical development of proprietary recombinant NK cells and monoclonal antibodies in monotherapy and in combination immunotherapies. The Company expects to benefit from the preclinical and clinical research conducted during the first and second year under this agreement and is providing the first and second year of funding under the five-year agreement. In April 2016 and April 2017, the Company paid $0.6 million to the National Cancer Institute as a prepayment for this first and second year of funding. The Company recognizes research and development expense ratably over a 12-month period and recorded $0.6 million and $0.5 million, respectively, of expense for the years ended December 31, 2017 and 2016.

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NantWorks

Under the NantWorks shared services agreement executed in November 2015, but effective August 2015, NantWorks provides corporate, general and administrative, manufacturing strategy, research and development, regulatory and clinical trial strategy and other support services. The Company is charged for the services at cost plus reasonable allocations for indirect costs that relate to the employees providing the services. For the years ended December 31, 2017, 2016 and 2015, the Company recorded $3.6 million, $3.9 million and $1.8 million, respectively, to selling, general and administrative expense and $3.2 million, $2.1 million and $0.3 million, respectively, in research and development expense under this arrangement on the consolidated statement of operations. These amounts exclude certain general and administrative expenses provided by third party vendors directly for the Company's benefit, which have been reimbursed to NantWorks based on those vendors' invoiced amounts without markup by NantWorks. In June 2016, the Company amended the existing shared services agreement with NantWorks whereby the Company can provide support services to NantWorks and/or any of its affiliates. For the years ended December 31, 2017 and 2016, the Company recorded expense reimbursements of $0.4 million and $0.1 million, respectively, to selling, general and administrative expense and $1.0 million and $0.2 million, respectively, to research and development expense. The Company owed NantWorks a net amount of $1.5 million for all agreements between the two affiliates at December 31, 2017, which is included in due to related parties on the consolidated balance sheet.

In November 2015, the Company entered into a facility license agreement with NantWorks, which became effective May 2015, for approximately 9,500 square feet in Culver City, California, which has been converted to a research and development laboratory and a cGMP laboratory. See Note 8 - Financing Lease Obligation for further details on this lease. The Company recorded rent expense of $0.2 million for each of the years ended December 31, 2017, 2016 and 2015, which is reflected in research and development expense on the consolidated statement of operations.

NantOmics, LLC

In June 2015, the Company entered into an agreement with NantOmics, LLC (NantOmics) to obtain genomic sequencing and proteomic analysis services, as well as related data management and bioinformatics services, exclusively from NantOmics. The Company will have rights to use the data and results generated from NantOmics' services in connection with the performance of the particular oncology trial with respect to which the services were performed, but NantOmics will own the data and results, as well as any other intellectual property it creates in performing these services on the Company's behalf. The Company is obligated to pay NantOmics a fixed, per sample fee, determined based on the type of services being provided. The agreement has an initial term of five years and renews automatically for successive one year periods, unless terminated earlier. For the years ended December 31, 2017, 2016 and 2015, the Company recorded operating expense of $0.1 million, $0.2 million and $0.1 million, respectively, to research and development under this arrangement on the consolidated statement of operations. The Company owed NantOmics $0.1 million at December 31, 2017.

NanoCav LLC

In June 2015, the Company entered into an agreement with NanoCav, LLC (NanoCav), a related party, pursuant to which the Company obtained access to NanoCav's virus-free cell transfection technologies on a non-exclusive basis. Under the agreement, NanoCav will conduct certain, mutually-agreed feasibility studies, on a fee for service basis, to evaluate the use of its cell transfection technologies with the Company's aNK platform products and non-proprietary NK cells. The agreement has an initial term of five years and renews automatically for successive one year periods, unless terminated earlier. In September 2015, the Company made a $45,000 feasibility study retainer payment as required by the agreement. For the years ended December 31, 2017, 2016 and 2015, the Company recorded operating expense of $0, $0.1 million and $0, respectively, to research and development under this arrangement on the consolidated statement of operations. At December 31, 2017, no balance was due to either party.

NantCell Inc.

In June 2015, the Company also entered into a supply agreement with NantCell pursuant to which the Company has the right to purchase NantCell's proprietary bioreactors, made according to specifications mutually agreed to with NantCell. The Company also has the right to purchase reagents and consumables associated with such equipment from NantCell. When an upfront payment is made, it is included in prepaid expenses on the consolidated balance sheets until the product is received. The agreement has an initial term of five years and renews automatically for successive one year periods unless terminated earlier.

During the year ended December 31, 2017, the Company purchased bioreactors resulting in $0.3 million in capitalized equipment on the consolidated balance sheet. Under the same agreement, the Company also has the right to purchase reagents and consumables associated with such equipment from NantCell. During the years ended December 31, 2017, 2016 and 2015, the Company recorded research and development expense of $0.3 million, $0.2 million and $0, respectively, on the consolidated statement of operations. At December 31, 2017, the Company owed NantCell $0 and has a prepaid balance of $0.2 million included in prepaid expenses and other current assets on the consolidated balance sheet.

10. Spin-out of Brink Biologics and Coneksis

On June 9, 2015, the Company spun out its business related to testing and diagnostic products and services into the entity, Brink Biologics in exchange for all of the issued and outstanding shares of Brink Biologics, which were subsequently distributed by a dividend to our stockholders. Under the spin-out arrangement, the Company transferred to Brink Biologics all of the Company's existing revenue-earning, non-exclusive license agreements that allow third parties to use the Company's cell lines and intellectual property for non-clinical laboratory testing. In addition, the Company transferred or licensed to Brink Biologics the Company's other assets associated with testing and diagnostics products and services. The Company granted to Brink Biologics worldwide, exclusive licenses to the use of certain cell lines limited to the field of in vitro and in vivo testing and diagnostic products and services, trademarks, intellectual property, and patents, including the Company's rights under its license agreement with Fox Chase Cancer Center. As part of the agreement, the Company also has a non-exclusive license to any results and data arising from Brink Biologics' use of the Company's cell lines and intellectual property for the Company's use for internal research purposes and outside of Brink Biologics' field. In consideration for the license grants, Brink Biologics is obligated to pay the Company a low single-digit royalty on amounts received for the sale of licensed products and services, as well as a low single-digit percentage share of other revenue received by Brink Biologics from the grant of sublicenses under the Company's rights.

For the years ended December 31, 2017, 2016 and 2015, the Company recorded $25,000, $21,000 and $11,000, respectively, in revenue for royalties on the consolidated statement of operations. Brink Biologics and the Company have the right to terminate the license agreement under certain conditions. Also, as part of the spin-out arrangement, the Company has agreed to provide certain services to Brink Biologics for a transitional period on a fee-for-service basis. Invoices for services are to be issued monthly and payments are due 30 days from the date invoiced. In the years ended December 31, 2017, 2016 and 2015, the Company invoiced $0.1 million, $0.1 million and $22,000, respectively, for services to Brink Biologics, which are recorded in other income on the consolidated statement of operations. At December 31, 2017, Brink Biologics owes the Company $34,000 which is included in due from related parties on the consolidated balance sheet.

On June 9, 2015, the Company spun out its business related to veterinary oncology into the entity, Coneksis in exchange for all of the issued and outstanding shares of Coneksis, which were subsequently distributed by a dividend to our stockholders. In connection with the spin-out arrangement, the Company granted to Coneksis worldwide, exclusive licenses for use of certain cell lines in the field of veterinary medical research and therapeutics, trademarks, intellectual property, and patents, including the Company's rights under its license agreement with Fox Chase Cancer Center. As part of the agreement, the Company also has a non-exclusive license to any results and data arising from Coneksis' use of the Company's cell lines and intellectual property for the Company's use for internal research purposes and outside of Coneksis' field. In consideration for the license grants, Coneksis is obligated to pay the Company a single-digit royalty on amounts received for the sale of licensed products and services, as well as a single-digit percentage share of other revenue received by Coneksis from the grant of sublicenses under the Company's rights. Coneksis and the Company have the right to terminate the license agreement under certain conditions. Also, as part of the spin-out arrangement, the Company agreed to provide certain services to Coneksis for a transitional period on a fee-for-service basis. Invoices for services are to be issued monthly and payments are due 30 days from the date invoiced.

For the years ended December 31, 2017, 2016 and 2015, the Company invoiced Coneksis for service fees in the amount of $40,000, $19,000 and $6,000, which are recorded in other income on the consolidated statement of operations. At December 31, 2017, Coneksis owes the Company $0.1 million, which has been fully reserved.

The Company determined it has a variable interest in both Brink Biologics and Coneksis through its royalty agreements. Based upon the level of equity investment at risk, Brink Biologics and Coneksis are considered VIEs. The Company considered whether it is the primary beneficiary of the Brink Biologics and Coneksis VIEs and required to consolidate the entities. As the Company does not control the research and development or the sales of the potential licensed or commercialized products, the Company does not direct the activities of Brink Biologics and Coneksis that most significantly impact their economic performance. Therefore, the Company determined that it is not the primary beneficiary of the entities and does not consolidate the Brink Biologics VIE and the Coneksis VIE.

ASU No. 2014-08, Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity, amended the definition of a discontinued operation, and requires additional disclosures about discontinued operations, as well as disposal transactions that do not meet the discontinued operations criteria. Under the new guidance, only disposals of a component representing a strategic shift in operations, that has or will have a major impact on the Company's operations or financial results, should be classified as discontinued operations. The spin-out of Banks Biologics and Coneksis did not have a major impact on the Company's operations or financial results, and accordingly, are not being reported as discontinued operations.

11. Stockholders' Equity

Stock Repurchase—In November 2015, the board of directors approved a share repurchase program (the 2015 Share Repurchase Program) allowing the CEO or CFO, on behalf of the Company, to repurchase from time to time, in the open market or in privately negotiated transactions, up to $50.0 million of the Company's outstanding shares of common stock, exclusive of any commissions, markups or expenses. The timing and amounts of any purchases will be based on market conditions and other factors, including price, regulatory requirements and other corporate considerations. The 2015 Share Repurchase Program does not require the purchase of any minimum number of shares and may be suspended, modified or discontinued at any time without prior notice. The Company expects to finance the purchases with existing cash balances. 2,157,944 shares were repurchased for a total of $15.8 million during the year ended December 31, 2016. No shares were repurchased under the program during the year ended December 31, 2015.

During the year ended December 31, 2017, the Company repurchased 3,633,610 shares of its common stock, at prices ranging between $3.10 per share and $5.00 per share for a total of $15.2 million, including $0.1 million of broker commissions on repurchases. The shares are formally retired through board approval upon repurchase. The Company accounted for the repurchases under the constructive retirement method and allocated the excess of the repurchase price over par value to accumulated deficit. At December 31, 2017, $19.1 million remained authorized for repurchase under the Company's 2015 Share Repurchase Program.

A summary of common stock repurchases for the year ended December 31, 2017 is as follows:

	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Maximum approximate dollar value of shares that may yet be purchased under the plans or programs
March	300,000	$ 3.50	300,000	$33.1 million
May	1,028,200	$ 3.92	1,328,200	$29.1 million
June	1,744,009	$ 4.18	3,072,209	$21.8 million
November	244,574	$ 4.87	3,316,783	$20.6 million
December	316,827	$ 4.94	3,633,610	$19.1 million
Total	3,633,610	$ 4.16		

Conversion—In June 2015, the board of directors and the requisite shareholders approved the conversion of Class A common stock to common stock. Each share of Class A common stock (the 2015 Conversion) converted into 1.00

share of common stock. Additionally, the number of authorized shares of common stock was increased from 80,000,000 to 100,000,000.

Forward Stock Split—On July 10, 2015, the Company amended its amended and restated certificate of incorporation effecting a 1.8515-for-1 forward stock split of its common stock. The forward stock split did not cause an adjustment to the par value or the authorized shares of the common stock or preferred stock. As a result of the forward stock split, the Company also adjusted the share and per-share amounts under its 2014 Equity Incentive Stock Plan and common stock warrant agreements with third parties. No fractional shares were issued in connection with the forward stock split. All disclosure of common shares and per common share data on the accompanying consolidated financial statements and related notes have been adjusted retroactively to reflect the forward stock split for all periods presented.

Amended and Restated Certificate of Incorporation—On July 31, 2015 the Company amended its Certificate of Incorporation to increase the number of authorized shares of common stock from 100,000,000 to 500,000,000.

Common Stock—In June 2015, the Company sold 3,698,695 shares of common stock in a private placement offering for net proceeds of $71.0 million after $28,000 of issuance costs. On July 8, 2015, the Company sold 364,638 shares of common stock in a private placement offering for gross proceeds of $7.0 million. On July 31, 2015, the Company closed its IPO and sold 9,531,200 shares of common stock for net proceeds of $221.5 million after underwriters' discounts and commissions and offering expenses of $16.8 million. In addition, the Company completed a separate private placement concurrent with the completion of the IPO and sold 680,000 shares of common stock for proceeds of $17.0 million.

Class A Common Stock—On June 18, 2015, the Company repurchased 249,952 shares of Class A common stock from an employee at $19.20 per share for $4.8 million. This was not part of the November 2015 share repurchase program described above.

Common Stock Warrants—In March 2015, the board of directors approved the issuance of a stock option and a warrant to purchase Class A common stock to an officer of the Company (Note 12). In connection with its acquisition of Inex Bio in March 2015, the Company issued warrants to purchase 3,202,592 shares of Class A common stock with an exercise price of $2.00 per share (Note 15). In April 2015, the Company received $6.4 million for the full exercise of the warrants.

In April 2015, a warrant to purchase 114,822 shares of Class A common stock was exercised. The warrant, issued in 2010 in conjunction with a termination and release agreement, was initially exercisable at $2.44 per share, and was ultimately exercised at $1.76 per share. The warrant was exercisable through February 2020. The warrant included a provision that for a period through two years after a reverse merger, the exercise price of the warrant was protected against down-round financing unless 66.67% of shareholders consent to the new transaction. Pursuant to ASC Subtopic 815-15 and ASC Subtopic 815-40, the fair value of the warrant of $0.4 million was recorded as a derivative liability on the issuance date. The fair value of the warrant was estimated at the issuance date and was revalued at each reporting period and the exercise date using a Monte Carlo simulation. At April 30, 2015, the date of exercise, the Company recorded a derivative liability of approximately $1.5 million. The change in fair value of the derivative liability is included in other income (expense) on the consolidated statements of operations.

Common Stock Reserved for Future Issuance

The Company is authorized to issue up to a total of 500,000,000 shares of common stock, par value $0.0001 per share at December 31, 2017 and 2016. As of December 31, 2017 there were 79,021,878 shares of common stock issued and outstanding.

The following table summarizes the common shares reserved for issuance on exercise or vesting of various awards at December 31, 2017:

Issued and outstanding stock options	5,693,250
Issued and outstanding restricted stock units	888,189
Outstanding financing warrants	131,838
Outstanding officer warrants	17,589,250
Total shares reserved for future issuance	24,302,527

12. Stock-Based Compensation

2014 Equity Incentive Plan—In March 2014, the Company's board of directors and stockholders approved the 2014 Equity Incentive Plan (2014 Plan) under which 11,109,000 shares of Class A common stock were reserved for the

granting of ISOs, non-statutory stock options, stock appreciation rights, restricted stock awards, restricted stock units and performance awards to employees, directors and consultants. Recipients of stock awards are eligible to purchase shares of the Company's common stock at an exercise price equal to no less than the estimated fair market value of such stock on the date of grant. The maximum term of awards granted under the 2014 Plan is ten years. Stock awards are generally not exercisable prior to the applicable vesting date, unless otherwise accelerated under the terms of the applicable stock plan agreement. Unvested shares of the Company's common stock issued in connection with an early exercise allowed by the Company may be repurchased by the Company upon termination of the optionee's service with the Company.

2015 Equity Incentive Plan—In July 2015, the Company's board of directors adopted the 2015 Equity Incentive Plan (2015 Plan). The 2015 Plan permits the grant of incentive stock options, within the meaning of Section 422 of the Code, to the Company's employees and for the grant of non-statutory stock options, restricted stock, restricted stock units, stock appreciation rights, performance units and performance shares to the Company's employees, directors and consultants. A total of 2,659,117 shares are reserved for future grants pursuant to the 2015 Plan as of December 31, 2017. In addition, the shares reserved for future grants under the 2015 Plan will include shares subject to stock options or similar awards granted under the 2014 Plan that expire or terminate without having been exercised in full and shares issued pursuant to awards granted under the 2014 Plan that are forfeited to or repurchased by the Company (provided that the maximum number of shares that may be added to the 2015 Plan pursuant to this provision is 6,635,489 shares as of December 31, 2017).

Modification of Stock-based Awards to an Officer—On March 24, 2015, the Company granted a non-qualified stock option (the Option) and a warrant (the Warrant) to purchase 1,851,500 shares and 17,589,250 shares of the Company's common stock, respectively, to an officer of the Company. The Option had an exercise price of $2.00 per share, a ten-year term and vests monthly over 40 months from the grant date. The Warrant had an exercise price of $2.00 per share, a three-year term and included performance-based vesting conditions.

Subsequent to the original grant date, the Company modified the terms and conditions of the Option and the Warrant, and on May 8, 2015, the Company and the officer reached a mutual agreement on the revised terms of the Option and the Warrant. By mutual agreement, the Company increased the exercise price of the Option from $2.00 per share to $2.20 per share and reduced the term of the Option from ten to four years. The Warrant's vesting conditions changed from performance based to a combination of performance based for 10,183,250 shares, including modified performance milestones from the original grant, and service based for 7,406,000 shares. In addition, the Company revised the term of the Warrant from three to four years.

The Company treated these changes to the Option and the Warrant as modifications of the terms and conditions of an equity award. The change in the term and exercise price of the Option did not result in incremental stock compensation expense as the higher exercise price and shorter term reduced the overall value of the modified Option.

The change in the terms for the Warrant resulted in incremental compensation expense of $91.5 million, of which $53.0 million is recognized upon achievement of performance milestones and $38.5 million is recognized over the service period, since the fair value of the modified Warrant is higher than the original fair value. Incremental compensation expense of $12.0 million, $19.0 million and $53.8 million was recognized during the years ended December 31, 2017, 2016 and 2015, respectively, and the remaining $6.7 million is expected to be recognized over the remaining vesting period of 0.6 years.

Issuance of options and restricted stock units to Officers—In accordance with their employment agreements, the Company granted to its CEO and its President and Chief Administrative Officer upon the IPO a total of 1,455,450 options to purchase common stock with an exercise price of $25.00 per share and 970,300 restricted stock units representing the right to receive one share of the Company's common stock for each restricted stock unit that becomes vested. The options and restricted stock units vested 50% at grant and the remaining 50% vested upon the first anniversary of the IPO.

Stock-Based Compensation

The following table presents all stock-based compensation as included on the Company's consolidated statements of operations (in thousands):

	For the Year Ended December 31,		
	2017	2016	2015
Stock-based compensation expense:			
Warrants for common stock to an officer	$31,584	$50,502	$141,901
Warrants for common stock to an officer and a former director related to Inex Bio, Inc. acquisition	—	—	22,747
Employee stock options	4,267	14,720	25,498
Non-employee stock options	—	—	3,300
Employee restricted stock units	894	8,166	17,505
Non-employee restricted stock units	252	464	270
	$36,997	$73,852	$211,221
Stock-based compensation expense in operating expenses:			
Research and development	$102	$852	$1,221
Selling, general and administrative	36,895	73,000	210,000
	$36,997	$73,852	$211,221

Stock Options

The following table summarizes stock option activity under all equity incentive plans for the years ended December 31, 2017, 2016 and 2015:

	Number of Shares	Weighted-Average Exercise Price	Aggregate Intrinsic Value (in 000)	Weighted-Average Remaining Contractual Life (in years)
Outstanding at December 31, 2014	5,138,410	$ 0.85	$5,298	9.7
Options granted	5,713,899	$ 7.92		
Options exercised	(1,127,105)	$ 0.86		
Options forfeited/canceled	(947,311)	$ 1.87		
Outstanding at December 31, 2015	8,777,893	$ 5.36	$116,273	7.2
Options exercised	(2,398,883)	$ 0.76		
Options forfeited/canceled	(71,624)	$ 2.00		

Outstanding at December 31, 2016	6,307,386	$ 7.14	$ 19,100	6.4
Options exercised	(614,136)	$ 1.88		
Outstanding at December 31, 2017	5,693,250	$ 7.71	$ 11,920	5.3
Vested and Exercisable at December 31, 2017	5,114,656	$ 8.33	$ 10,073	5.7

The vested and exercisable shares at December 31, 2016 and 2015 were 5,210,756 and 4,844,857, respectively.

The following table provides a summary of options outstanding and vested as of December 31, 2017:

Exercise Prices	Number Outstanding	Weighted-Average Life (in years)	Number Exercisable	Weighted-Average Life (in years)
$0.22	134,800	6.2	134,800	6.2
$0.42	589,660	6.9	589,660	6.9
$1.76	699,060	7.0	699,060	7.0
$2.00	962,780	7.1	962,780	7.1
$2.20	1,851,500	1.2	1,272,906	1.2
$25.00	1,455,450	7.6	1,455,450	7.6
	5,693,250	5.3	5,114,656	5.7

The aggregate intrinsic value of stock options exercised during the years ended December 31, 2017, 2016 and 2015 was $1.7 million, $17.0 million and $2.4 million, respectively. The cash received from exercised options was $1.2 million, $1.4 million and $0.9 million, respectively, for the years ended December 31, 2017, 2016 and 2015.

The Company records equity instruments issued to non-employees as expense at the fair value over the related service period as determined in accordance with the authoritative guidance and periodically revalues the equity instruments as they vest. The Company granted to non-employees stock options for 231,437 shares during the year ended December 31, 2015. All non-employees with stock options terminated prior to December 31, 2015, so there has been no related expense since then. All vested options were exercised within 90 days of those terminations, in accordance with the Equity Incentive Plans. No options were granted to non-employees in 2016 or 2017.

The total unrecognized compensation cost related to non-vested stock options as of December 31, 2017 is $4.8 million, which is expected to be recognized over a weighted-average period of 1.2 years.

The Company uses a Black-Scholes option-pricing model to determine the fair value of stock-based compensation under ASC Topic 718, Stock Compensation. The assumptions used for employee and non-employee stock options are presented in the table below:

	For the Year Ended December 31, 2015	
	Employee Grants	Non-Employee Grants
Expected term (years)	4.0 - 5.5	8.4 - 9.9
Risk-free interest rate	1.5% - 1.8%	0% - 2.4%
Expected volatility	80%	80%
Dividend yield	0%	0%
Weighted-average measurement date fair value	$12.08	$ 15.25

The assumed dividend yield was based on the Company's expectation of not paying dividends in the foreseeable future. The estimated volatility is based on a weighted-average calculation of a peer group of comparable companies whose share prices are publicly available. The risk-free interest rate assumption was based on the U.S. Treasury's rates for U.S. Treasury zero-coupon bonds with maturities similar to those of the expected term of the award being valued. The weighted-average expected life of options was estimated using the average of the contractual term and the weighted-average vesting term of the options.

Restricted Stock Units

The following table summarizes the restricted stock units (RSUs) activity under the 2015 Plan:

	Number of Restricted Stock Units Outstanding	Weighted-Average Grant Date Fair Value
Unvested balance at December 31, 2014	—	$ —
Granted	1,614,788	$ 21.86
Vested	(485,150)	$ 25.00
Unvested balance at December 31, 2015	1,129,638	$ 20.51
Granted	407,800	$ 7.76
Vested	(537,982)	$ 23.75
Forfeited/canceled	(185,000)	$ 11.75
Unvested balance at December 31, 2016	814,456	$ 13.98
Granted	615,983	$ 4.50
Vested	(244,209)	$ 15.82
Forfeited/canceled	(298,041)	$ 10.28
Unvested balance at December 31, 2017	888,189	$ 8.14

During the years ended December 31, 2017, 2016 and 2015, the Company granted 77,250, 67,500 and 353,188 shares of RSUs, respectively, to non-employees. Of the 77,250 granted to non-employees, 27,250 shares were granted to employees of related companies under the Company's shared services agreement with NantWorks (Note 9).

As of December 31, 2017, there was $4.1 million of unrecognized stock-based compensation expense related to RSUs that is expected to be recognized over a weighted-average period of 2.8 years. Of that amount, $3.1 million of unrecognized expense is related to employee grants with a weighted-average period of 2.9 years and $0.9 million expense is related to non-employee grants with a weighted-average period of 2.4 years that is impacted by periodic mark-to-market adjustments.

Warrants

The following table summarizes the Company's warrant activity:

Outstanding at December 31, 2014	1,850,937
Warrants granted	20,791,842
Warrants exercised	(4,677,101)
Warrants forfeited	(146,062)
Outstanding at December 31, 2015	17,819,616
Warrants exercised	(51,302)
Outstanding at December 31, 2016	17,768,314
Warrants exercised	(47,226)

Outstanding at December 31, 2017	17,721,088
Vested and exercisable at December 31, 2017	16,425,038

The total unrecognized compensation cost related to non-vested warrants as of December 31, 2017 is $17.8 million, which is expected to be recognized over a weighted-average period of 0.6 years.

Common Stock Reserved for Future Grants under the 2015 Equity Incentive Plan

At December 31, 2017, the Company has reserved authorized shares of common stock for future grants of equity awards as follows:

Shares approved for 2015 Equity Incentive Plan	3,500,000
Shares remaining from 2014 Equity Incentive Plan	749,857
Total shares authorized under the 2015 Plan	4,249,857
Grants	(3,070,238)
Forfeitures added back to available pool	947,063
Shares reserved for future grants as of December 31, 2015	2,126,682
Grants	(407,800)
Add backs approved under the Plan:	
Forfeitures added back to available pool	185,000
Net share settlement	225,754
Exercised option shares repurchased	615,392
Shares reserved for future grants as of December 31, 2016	2,745,028
Grants	(615,983)
Add backs approved under the Plan:	
Forfeitures added back to available pool	298,041
Net share settlement	232,031
Shares reserved for future grants as of December 31, 2017	2,659,117

13. Income Taxes

The amount of loss before taxes is (in thousands):

	For the Year Ended December 31,		
	2017	2016	2015
U.S. loss before taxes	$(94,734)	$(118,743)	$(235,750)
Foreign loss before taxes	(2,182)	(2,638)	(1,427)
Loss before income taxes	$(96,916)	$(121,381)	$(237,177)

Income tax (benefit) expense for the years ended December 31, 2017, 2016 and 2015 consists of the following (in thousands):

	For the Year Ended December 31,		
	2017	2016	2015
Current:			
Federal	$—	$—	$—
State	4	3	1
Foreign	—	—	—

Total Current	4	3	1
Deferred:			
Federal	—	—	—
State	—	—	—
Foreign	(497)	(575)	(302)
Total Deferred	(497)	(575)	(302)
Income tax (benefit) expense	$(493)	$(572)	$(301)

The components that comprise the Company's net deferred tax assets at December 31, 2017 and 2016 consist of the following (in thousands):

	As of December 31,	
	2017	2016
Deferred tax assets:		
Stock compensation	$73,336	$87,239
Net operating loss carryforwards	42,784	37,507
Leases and other accrued liabilities	1,868	2,096
Tax credits	845	—
Accrued compensation	682	808
Total deferred tax assets	119,515	127,650
Deferred tax liabilities:		
Foreign intangibles	(499)	(996)
Depreciation and amortization	(494)	(309)
Total deferred tax liabilities	(993)	(1,305)
Net deferred tax assets	118,522	126,345
Valuation allowance	(119,020)	(127,341)
Net deferred tax liability	$(498)	$(996)

A reconciliation of the federal statutory income tax rate to the Company's effective income tax rate is as follows:

	For the Year Ended December 31,		
	2017	2016	2015
Tax computed at federal statutory rate	34.0 %	34.0 %	34.0 %
Section 382/383 NOL	—	8.6	(3.5)
State income taxes, net of federal tax benefit	5.3	3.6	2.6
Tax rate adjustment	4.8	1.5	—
Tax Cuts and Jobs Act	(53.4)	—	—
Research and development credits	0.6	1.3	0.1
Stock-based compensation	(0.3)	(0.3)	(0.4)
Other	0.8	(0.5)	(3.8)
Valuation allowance	8.7	(47.7)	(28.9)
Effective income tax rate	0.5 %	0.5 %	0.1 %

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (Act of 2017). The Act amends the Internal Revenue Code (IRC) to reduce tax rates and modify policies, credits, and deductions for individuals and businesses. For businesses, the Act of 2017 reduces the corporate tax rate from a maximum of 35% to a flat 21% rate. The rate reduction is effective on January 1, 2018. As a result of the rate reduction, the Company has reduced the deferred tax asset balance as of December 31, 2017 by $51.7 million. Due to the Company's full valuation allowance position, the Company has also reduced the valuation allowance by the same amount. Due to uncertainties which currently exist in the interpretation of the provisions of the Act of 2017 regarding

IRC Section 162(m), the Company has not completed its evaluation of the potential impacts of IRC Section 162(m) as amended by the Act of 2017 on its financial statements. Current provisional amounts are recorded in a manner consistent with interpreting the 2017 Act as not materially impacting the IRC 162(m) evaluation.

On December 22, 2017, Staff Accounting Bulletin No. 118 (SAB 118) was issued to address the application of U.S. GAAP when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act of 2017. In accordance with SAB 118, the Company has determined that there is no deferred tax benefit or expense with respect to the re-measurement of certain deferred tax assets and liabilities due to the full valuation allowance against net deferred tax assets. Additional analysis of the law and the impact to the Company will be performed and any impact will be recorded in the respective quarter in 2018.

Pursuant of IRC Sections 382 and 383, annual use of the Company's net operating loss and research and development credit carryforwards may be limited in the event a cumulative change in ownership of more than 50% occurs within a three-year period . The Company completed an IRC Section 382/383 analysis through 2017 regarding the limitation of net operating loss and research and development credit carryforwards. The Company has derecognized the deferred tax assets for net operating losses and federal and state research and development credits of $0.8 million from its deferred tax asset schedule as of December 31, 2017. The Company had previously derecognized $1.2 million deferred tax assets for net operating losses and federal and state research and development credits as of December 31, 2016. There is no impact to tax expense for the derecognition of the net operating losses and federal and state research and development credits due to the valuation allowance recorded against the deferred tax assets. Additionally, the Company has not recognized the deferred tax asset for research and development credits carryforwards as of December 31, 2017 because the Company is a part of a controlled group of affiliated companies with common ownership and cannot complete its calculation of the credit until the time that all members of the controlled group complete their analysis and calculation of qualified research expenditures. The Company does not expect that the unrecognized tax benefits will change within 12 months of this reporting date. Due to the existence of the valuation allowance, future changes in the Company's unrecognized tax benefits will not impact the Company's effective tax rate.

In assessing the realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies in making this assessment. Based on the level of historical operating results and the uncertainty of the economic conditions, the Company has recorded a full valuation allowance of $119.0 million at December 31, 2017. The change in the valuation allowance for the year end December 31, 2017 was a decrease of $8.3 million. The portion of the valuation allowance for deferred tax assets for which subsequently recognized tax benefits will be credited directly to contributed capital is $0.2 million.

The Company has not incurred any material interest or penalties as of the current reporting date with respect to income tax matters. The Company does not expect that there will be unrecognized tax benefits of a significant nature that will increase or decrease within 12 months of the reporting date. The Company is subject to U.S. federal income tax, as well as income tax in California and other states. The federal returns for tax years 2014 through 2017 remain open to examination; the California returns remain subject to examination for tax years 2013 through 2017. Carryforward attributes that were generated in years where the statute of limitations is closed may still be adjusted upon examination by the Internal Revenue Service or other respective tax authority. All other state jurisdictions remain open to examination.

At December 31, 2017, the Company has federal net operating losses (NOLs) of approximately $165.9 million, state NOLs of $136.2 million, and foreign NOLs of $0.2 million. The federal NOL carryforwards begin to expire in 2024, the state NOL carryforwards begin to expire in 2030 and the foreign NOL carryforwards begin to expire in 2022. At December 31, 2017, the Company also had federal research tax credit carryforwards of approximately $3.2 million and California research tax credits of $1.9 million. The federal research tax credit carryforwards begin to expire in 2034 and the state research tax credit carryforwards begin to expire in 2029.

The following table summarizes the changes to the amount of unrecognized tax benefits (in thousands):

Unrecognized tax benefits at December 31, 2015	$1,203
Decrease for prior year tax positions	(1,203)
Increase for prior year tax positions	2,578
Increase for current year tax positions	2,056

Unrecognized tax benefits at December 31, 2016	4,634
Decrease for prior year tax positions	(812)
Increase for current year tax positions	2,755
Unrecognized tax benefits at December 31, 2017	$6,577

Included in the balance of unrecognized tax benefits at December 31, 2017, is $6.0 million that, if recognized, would not impact the Company’s income tax benefit or effective tax rate as long as the deferred tax asset remains subject to a full valuation allowance. The Company does not expect any significant increases or decreases to our unrecognized tax benefits within the next 12 months.

14. Notes Payable

Settlement Agreement Note—In 2007, the Company entered into a settlement agreement with a former officer of the Company (the Settlement Agreement Note). The Settlement Agreement Note included a cash payment to the former officer of $0.3 million payable upon the Company's receipt of any debt or equity financing. As part of the 2009 Convertible Notes financing, the Settlement Agreement Note was amended so that the Note will convert into Class A common stock at a conversion price of $2.44 per share on the second anniversary of Company being a publicly traded company.

In March 2015, the Company entered into a Supplemental Agreement and General Release (the Supplemental Agreement) with the former officer related to the Settlement Agreement. As a result, (i) the Company agreed to pay $0.13 million in exchange for retiring the note and (ii) the former officer agreed to exercise a warrant from 2008 to purchase 32,675 shares of Class A common stock at an exercise price of $2.44 per share. The Settlement Agreement Note is no longer outstanding as of December 31, 2015 and the $0.13 million difference between the carrying value of the Settlement Agreement Note and the amount paid to retire the Settlement Agreement Note is reflected in other income on the consolidated statement of operations for the year ended December 31, 2015.

15. Investment in Inex Bio, Inc.

In April 2012, the Company made a strategic decision to enter into a License Agreement with Inex Bio, Inc. (Inex Bio), a Republic of Korea corporation (the Inex License Agreement). Under the Inex License Agreement, the Company provided Inex Bio with an exclusive license to the Company's technology to be used in products only in certain Asian countries. In exchange for the Inex License Agreement, the Company received a $0.3 million up-front license fee. In addition, the Company was eligible to receive milestone payments of up to $0.8 million based upon completion of clinical trials and a 5% royalty on net sales of applicable products using the aNK cells. No milestone payments were due or received for the years ended December 31, 2015, 2014 or 2013.

In May 2012, the Company acquired 57,000 shares of Inex Bio for $0.2 million, which represented 22.2% of the outstanding shares and 17.4% of the fully-diluted shares of Inex Bio. The Company accounted for its investment under the equity method. The Company reviewed its investment for impairment in accordance with ASC Topic 320, Investments—Debt and Equity Securities.

In February and March 2015, Inex Bio Holdings (Holdings), an entity owned fifty percent (50%) by Cambridge Equities, L.P., an entity in which Dr. Soon-Shiong, the Company's CEO and one of the Company's directors, is the sole member of its general partner, and fifty percent (50%) by Eragon Ventures, LLC, an entity of which Dr. Ji, one of our former directors, is managing member, acquired 220,000 shares or 67.3% of Inex Bio from third party owners for $1.1 million.

On March 30, 2015, the Company entered into a Stock Purchase Agreement with Holdings and the third party owners, pursuant to which the Company acquired all the remaining outstanding shares of Inex Bio not previously held by the Company.

The Company paid to the other owners of Inex Bio cash of $1.5 million and issued warrants to acquire 593,072 shares of the Company's Class A common stock at an exercise price of $2.00 per share. The Company valued the warrants using the Black-Sholes option-pricing model with a stock price of $10.72 per share as of March 30, 2015, an expected term of 0.04 years, and a volatility of 80%. This resulted in a total fair value of the warrants of $5.2 million. In April 2015, the Company received $1.2 million for the full exercise of the warrants.

The Company recorded the transaction as an asset purchase because Inex Bio was a shell corporation without any employees or other significant assets and did not meet the definition of a business under ASC Topic 805, Business Combinations.

The purchase price paid to acquire Inex Bio from the other owners is as follows (in thousands):

Consideration	Total
Cash paid by Inex Bio Holdings, LLC	$1,100
Cash paid by Company	1,482
Fair value of warrants	5,170
Aggregate purchase price	$7,752

The following table summarizes the assets acquired and liabilities assumed (in thousands):

Cash	$763
Intangible assets—reacquired rights of Company technology	8,636
Other assets	42
Investment in Inex Bio	(221)
Deferred tax liability	(1,467)
Accounts payable	(1)
Total assets acquired and liabilities assumed	$7,752

The license solely covers pending patent applications at this time. The Company will amortize the intangible assets related to the reacquired rights of the Company technology over 4 years, which represents the period until the next action date of the pending patent application in the territory of the license issued to Inex Bio.

The Company paid Holdings cash of $6.5 million and issued warrants to acquire 2,609,520 shares of the Company's Class A common stock at an exercise price of $2.00 per share for its assistance in negotiating the acquisition of Inex Bio from the other owners. The Company valued the warrants using the Black-Sholes option-pricing model with a stock price of $10.72 per share as of March 30, 2015, an expected term of 0.04 years, and a volatility of 80%. This resulted in a fair value of total warrants of $22.7 million. In April 2015, the Company received $5.2 million for the full exercise of the warrants.

The following summarizes the net consideration paid to Holdings (in thousands):

Consideration	Total
Cash	$6,518
Fair value of warrants	22,747
Less cash paid to acquire shares in Inex Bio	(1,100)
Net consideration	$28,165

The Company recorded compensation expense for the portion of the cash and warrants issued to Holdings that exceeded the fair value of the shares acquired consistent with ASC Topic 718. The Company recorded $22.7 million of stock-based compensation and $5.4 million of cash compensation to the Company's CEO and the former director as a result of acquiring their interest in Inex Bio.

16. Summarized Quarterly Data (Unaudited)

The following financial information reflects all normal recurring adjustments that are, in the opinion of management, necessary for a fair statement of the results of the interim periods.

The table below presents unaudited quarterly data for fiscal 2017 and 2016 (in thousands, except for share and per share amounts):

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2017				
Revenue	$11	$14	$8	$12
Operating expenses	25,475	23,834	24,450	25,406
Operating loss	(25,464)	(23,820)	(24,442)	(25,394)
Net loss	(24,515)	(23,452)	(23,969)	(24,487)
Net loss per share - basic and diluted	$(0.30)	$(0.29)	$(0.30)	$(0.31)
Shares used in calculating net loss per share - basic and diluted	82,138,438	81,440,816	79,440,591	79,358,861

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2016				
Revenue	$6	$12	$12	$14
Operating expenses	31,622	34,977	32,787	25,157
Operating loss	(31,616)	(34,965)	(32,775)	(25,143)
Net loss	(30,677)	(33,997)	(31,897)	(24,238)
Net loss per share - basic and diluted	$(0.38)	$(0.41)	$(0.39)	$(0.29)
Shares used in calculating net loss per share - basic and diluted	81,574,709	81,959,248	82,154,219	82,235,571

17. Employee Benefits

Defined Contribution Benefit Plan - In December 2015, the Company adopted a 401(k) retirement and savings plan (the 401(k) Plan) covering all employees. The 401(k) Plan allows employees to make pre- and post-tax contributions up to the maximum allowable amount set by the IRS. The Company, at its discretion, may make certain contributions to the 401(k) Plan. The Company made contributions of $0.4 million, $0.2 million and $4,000 during the years ended December 31, 2017, 2016 and 2015, respectively.

Compensated Absences – Under the Company's vacation policy, certain salaried employees are provided unlimited vacation leave. Therefore, the Company does not record an accrual for paid leave related to these employees since the Company is unable to reasonably estimate the compensated absences that these employees will take.

18. Subsequent Event

In January 2018, the Company executed two new agreements with CSSIM, a related party (Note 9), for clinical trials on a squamous cell carcinoma vaccine and a triple negative breast cancer vaccine. The two trials combined will cost up to $12.7 million, depending on the number of patients that will be enrolled.

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Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

As previously reported on our Current Report on Form 8-K, dated August 24, 2016, the Audit Committee of our Board of Directors approved the dismissal of Mayer Hoffman McCann, P.C. (“Mayer Hoffman”), as our independent registered public accounting firm and approved the engagement of Ernst & Young LLP (“E&Y”), effective August 24, 2016. During the fiscal year ended December 31, 2015, and during the subsequent interim period through August 24, 2016, there were no disagreements with Mayer Hoffman on any matter of accounting principles or practices, financial statement disclosure or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of Mayer Hoffman, would have caused Mayer Hoffman to make reference to the subject matter of the disagreements. Additionally, there were no reportable events (as that term is described in Item 304(a)(1)(v) of Regulation S-K) during the fiscal year ended December 31, 2015, or during the subsequent interim period through August 24, 2016, except for the existence of a material weakness in internal control over financial reporting as previously disclosed in our Annual Report on Form 10-K for the year ended December 31, 2015.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Management, with the participation of its Chief Executive Officer (CEO) and Chief Financial Officer (CFO), evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2017. The term “disclosure controls and procedures,” as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, or the Exchange Act, means controls and other procedures of a company that are designed to provide reasonable assurance 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 Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to provide reasonable assurance that information required to be disclosed is accumulated and communicated to our management, including our CEO and CFO, 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 desired control objectives, and management necessarily is required to apply 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, 2017, our CEO and CFO have concluded that, as of December 31, 2017, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as such term is defined in Rule 13a-15(f) under the Exchange Act. Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our CEO and CFO, 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. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance (a) transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, (b) our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (c) regarding the prevention or timely detection of the unauthorized acquisition, use or disposition of assets that could have a material effect on our 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.

As of December 31, 2017, our management conducted an evaluation of the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control - Integrated Framework (2013). Based on this evaluation, our management concluded that, as of December 31, 2017, our internal control over financial reporting was effective.

This annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management’s report was not subject to attestation by our registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit us to provide only management’s report in this annual report.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting that occurred during the last fiscal quarter ended December 31, 2017, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Management recognizes that a control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud or error, if any, have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item will be contained in our definitive proxy statement to be filed with the Securities and Exchange Commission on Schedule 14A in connection with our 2018 Annual Meeting of Stockholders or the Proxy Statement, which is expected to be filed not later than 120 days after the end of our fiscal year ended December 31, 2017, and is incorporated herein by reference.

Item 11. Executive Compensation.

The information required by this item will be contained in the Proxy Statement under the headings “Executive Compensation” and “Director Compensation,” and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item will be contained in the Proxy Statement under the headings “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information,” and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item will be contained in the Proxy Statement under the headings “Certain Relationships and Related Party Transactions” and “Corporate Governance,” and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this item will be contained in the Proxy Statement under the heading “Ratification of Independent Registered Public Accounting Firm—Principal Accounting Fees and Services” and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The consolidated financial statements schedules and exhibits filed as part of this Annual Report on Form 10-K, or Annual Report, are as follows:

(1) Consolidated financial statements

Reference is made to the consolidated financial statements identified in the “Index to Financial Statements” under Part II, Item 8 of this Annual Report.

(2) Financial Statement Schedules

All other schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is otherwise on the consolidated financial statements or notes thereto.

(3) Exhibits

The documents listed in the Exhibit Index of this Annual Report are incorporated by reference or are filed with this Annual Report, in each case as indicated therein (numbered in accordance with Item 601 of Regulation S-K).

Exhibit Index

		Incorporated by Reference Herein			
Exhibit Number	Description	Form	File No.	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation of NantKwest, Inc.	8-K	001-37507	3.1	August 4, 2015
3.2	Amended and Restated Bylaws of NantKwest, Inc.	8-K	001-37507	3.2	August 4, 2015
4.1	Nominating Agreement by and between the Registrant and Cambridge Equities, LP, dated June 18, 2015.	S-1	333-205124	4.1	June 19, 2015
4.2	Form of Registration Rights Agreement by and between the Company and the Purchasers of Common Stock, dated June 2015.	S-1	333-205124	4.2	June 19, 2015
4.3	Registration Rights Agreement by and between the Company and Cambridge Equities LP, dated December 23, 2014.	S-1	333-205124	4.3	June 19, 2015
4.4	Registration Rights Agreement by and between the Company and Sorrento Therapeutics, Inc., dated December 13, 2014.	S-1	333-205124	4.4	June 19, 2015
4.5	Form of Subscription and Securities Purchase Agreement among the Company and the Subscribers of Series C Preferred Stock, dated as of April 1, 2014.	S-1	333-205124	4.5	June 19, 2015

4.6	Registration Rights Agreement, among the Company and the purchasers of Series B Preferred Stock, dated as of June 20, 2013.	S-1	333-205124	4.6	June 19, 2015
4.7	Specimen common stock certificate	S-1/A	333-205124	4.7	July 15, 2015
10.1	Form of Indemnification Agreement between the Company and each of its directors and executive officers.	S-1	333-205124	10.1	June 19, 2015
10.2+	2014 Equity Incentive Plan and forms of agreements thereunder.	S-1	333-205124	10.2	June 19, 2015
10.3+	2015 Equity Incentive Plan and forms of agreements thereunder.	S-1/A	333-205124	10.3	July 15, 2015
10.4+	Executive Incentive Compensation Plan.	S-1/A	333-205124	10.4	July 15, 2015
10.5+	Amended and Restated Executive Employment Agreement between the Company and Patrick Soon-Shiong, effective March 24, 2015.	S-1/A	333-205124	10.5	July 15, 2015

Exhibit Number	Description	Incorporated by Reference Herein Form	File No.	Exhibit	Filing Date
10.6+	Executive Employment Agreement between the Company and Barry J. Simon, M.D., dated January 1, 2015.	S-1	333-205124	10.6	June 19, 2015
10.7	License Agreement between the Company and Brink Biologics, Inc., dated June 9, 2015.	S-1	333-205124	10.7	June 19, 2015
10.8	License Agreement between the Company and Coneksis, Inc., dated June 9, 2015.	S-1	333-205124	10.8	June 19, 2015
10.9	Joint Development and License Agreement between the Company and Sorrento Therapeutics, Inc. dated December 18, 2014.	S-1	333-205124	10.9	June 19, 2015
10.10	License Agreement between the Company and Intrexon Corporation, dated February 23, 2010.	S-1	333-205124	10.10	June 19, 2015
10.11	UHN-ZelleRx License Agreement between University Health Network and the Company, dated May 9, 2005.	S-1	333-205124	10.11	June 19, 2015
10.12	License Agreement, as amended, between Fox Chase Cancer Center and the Company, dated as of July 10, 2004.	S-1	333-205124	10.12	June 19, 2015
10.13	Rush-ZelleRx License Agreement, between Rush University Medical Center and the Registrant, dated as of March 24, 2004.	S-1	333-205124	10.13	June 19, 2015
10.14	License Agreement, as amended, between Hans G. Klingemann and the Company, dated February 10, 2003.	S-1/A	333-205124	10.14	July 27, 2015
10.15	Form of Warrant to Purchase Common Stock issued pursuant to the Securities Purchase Agreement dated April 1, 2014.	S-1	333-205124	10.15	June 19, 2015
10.16	Common Stock Purchase Warrant issued March 24, 2015 to Patrick Soon-Shiong, M.D.	S-1	333-205124	10.16	June 19, 2015
10.17	Form of Warrant to Purchase Common Stock issued March 14, 2008.	S-1	333-205124	10.17	June 19, 2015
10.18	Genomic and Proteomic Services Agreement by and between the Company and NantOmics, LLC, dated June 18, 2015.	S-1	333-205124	10.18	June 19, 2015
10.19	Lease Agreement by and between ARE - John Hopkins Court, LLC and the Company, dated June 19, 2015.	S-1/A	333-205124	10.19	July 27, 2015
10.20	Shared Services Agreement by and between the Company and NantWorks, LLC, dated November 10, 2015.	10-K	001-37507	10.22	March 30, 2016

10.21	Facility License Agreement by and between the Company and NantWorks, LLC, dated November 10, 2015.	10-K	001-37507	10.23	March 30, 2016
10.22+	Offer Letter between Sonja Nelson and the Company, dated April 7, 2016	10-Q	001-37507	10.1	May 16, 2016
10.23	Amended and Restated Shared Services Agreement by and between the Company and NantWorks LLC, dated June 28, 2016	10-Q	001-37507	10.1	August 15, 2016
10.24	Lease agreement by and between the Company and 605 Doug Street, LLC, dated June 28, 2016	10-Q	001-37507	10.1	November 10, 2016
21.1*	Subsidiaries.				
23.1*	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.				

Exhibit Number	Description	Incorporated by Reference Herein Form	File No.	Exhibit	Filing Date
23.2*	Consent of Mayer Hoffman McCann P.C., Independent Registered Public Accounting Firm.				
24.1*	Power of Attorney (Contained on Signature Page to this Annual Report on Form 10-K).				
31.1*	Rule 13a-14(a) / 15d-14(a) Certification of Principal Executive Officer				
31.2*	Rule 13a-14(a) / 15d-14(a) Certification of Principal Financial Officer				
32.1**	Section 1350 Certification of Chief Executive Officer.				
32.2**	Section 1350 Certification of Chief Financial Officer.				
101.INS	XBRL Instance Document				
101.SCH	XBRL Taxonomy Extension Schema Document				
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				

*Filed herewith.

**The certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of NantKwest, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report, irrespective of any general incorporation language contained in such filing.

+Indicates a management contract or compensatory plan.

†Portions of the exhibit have been omitted pursuant to an order granted by the Securities and Exchange Commission for confidential treatment.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

NantKwest, Inc.

Date: March 12, 2018 By: /s/ Patrick Soon-Shiong
Patrick Soon-Shiong
Chairman and Chief Executive Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Patrick Soon-Shiong and Richard J. Tajak, and each of them, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, 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 he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Signature	Title	Date
	Chairman of the Board of Directors and Chief Executive Officer	
/s/ Patrick Soon-Shiong Patrick Soon-Shiong	(Principal Executive Officer)	March 12, 2018
/s/ Barry J. Simon Barry J. Simon	President, Chief Administrative Officer and Director	March 12, 2018
	Interim Chief Financial Officer	
/s/ Richard J. Tajak Richard J. Tajak	(Principal Financial Officer)	March 12, 2018
	Chief Accounting Officer	
/s/ Sonja Nelson Sonja Nelson	(Principal Accounting Officer)	March 12, 2018

/s/ Steve Gorlin Steve Gorlin	Vice Chairman of the Board of Directors	March 12, 2018
/s/ Michael D. Blaszyk Michael D. Blaszyk	Director	March 12, 2018
/s/ Frederick W. Driscoll Frederick W. Driscoll	Director	March 12, 2018
/s/ John T. Potts, Jr. John T Potts, Jr.	Director	March 12, 2018
/s/ John C. Thomas, Jr. John C. Thomas, Jr.	Director	March 12, 2018