Sorrento Therapeutics, Inc.
Form 10-K
March 22, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended: December 31, 2016

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission File Number 001-36150

SORRENTO THERAPEUTICS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	33-0344842
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
9380 Judicial Drive, San Diego, California	92121
(Address of Principal Executive Offices)	(Zip Code)

(858) 210-3700

(Registrant’s telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of exchange on which registered
Common Stock, par value $0.0001 per share	The NASDAQ Stock Market LLC

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

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange 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 the filing requirements for at least 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 (Section 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

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

Large accelerated filer Accelerated filer

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

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

The aggregate market value of voting stock held by non-affiliates of the registrant is calculated based upon the closing sale price of the common stock on June 30, 2016 (the last trading day of the registrant's second fiscal quarter of 2016), as reported on The NASDAQ Capital Market, was approximately $366.5 million.

At March 9, 2017, the registrant had 50,887,102 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of our Proxy Statement for the 2017 Annual Meeting of Stockholders or an amendment to this Annual Report on Form 10-K, to be filed within 120 days of December 31, 2016, are incorporated by reference in Part III.

SORRENTO THERAPEUTICS, INC.

ANNUAL REPORT ON FORM 10-K

FISCAL YEAR ENDED DECEMBER 31, 2016

TABLE OF CONTENTS

i

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, or Form 10-K, contains "forward-looking statements" that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially and adversely from those expressed or implied by such forward-looking statements. The forward-looking statements are contained principally in Item 1—"Business," Item 1.A—"Risk Factors" and Item 7—"Management's Discussion Analysis of Financial Condition and Results of Operations" but appear throughout the Form 10-K. Examples of forward-looking statements include, but are not limited to our expectations, beliefs or intentions regarding our potential product offerings, business, financial condition, results of operations, strategies or prospects and other matters that do not relate strictly to historical facts or statements of assumptions underlying any of the foregoing. These statements are often identified by the use of words such as "anticipate," "believe," "continue," "could," "estimate," "exp "intend," "may," "ongoing," "opportunity," "plan," "potential," "predicts," "seek," "should," "will," or "would," and similar ex variations or negatives of these words. These forward-looking statements are based on the expectations, estimates, projections, beliefs and assumptions of our management based on information currently available to management, all of which are subject to change. Such forward-looking statements are subject to risks, uncertainties and other factors that are difficult to predict and could cause our actual results and the timing of certain events to differ materially and adversely from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those discussed under Item 1.A—"Risk Factors" in this Form 10-K. Furthermore, such forward-looking statements speak only as of the date of this Form 10-K. We undertake no obligation to update or revise publicly any forward-looking statements to reflect events or circumstances after the date of such statements for any reason, except as otherwise required by law.

PART I

Item 1. Business.

Overview

Sorrento is a clinical stage biotechnology company focused on delivering clinically meaningful therapies to patients and their families, globally. Our primary focus is to transform cancer into a treatable or chronically manageable disease. We also have programs assessing the use of our technologies and products in auto-immune, inflammatory, neurodegenerative, infectious diseases and pain indications with high unmet medical needs.

At our core, we are an antibody-centric company and leverage our proprietary G-MAB™ library to identify, screen and validate fully human antibodies against high impact oncogenic targets and mutations, immune modulators and intracellular targets. To date, we have screened over 100 validated targets and generated a number of fully human antibodies against these targets which are at various stages of preclinical development. These include PD-1, PD-L1, CD38, CD123, CD47, c-MET, VEGFR2, CCR2, OX40, TIGIT and CD137 among others.

Our vision is to leverage these antibodies in conjunction with proprietary targeted delivery modalities to generate the next generation of cancer therapeutics. These modalities include proprietary antibody drug conjugates ("ADCs"), bispecific approaches, as well as T-Cell Receptor ("TCR")-like antibodies. With LA Cell, Inc. ("LA Cell"), our joint venture with City of Hope, our objective is to become the global leader in the development of antibodies against intracellular targets such as STAT3, mutant KRAS, MYC, p53 and TAU. Additionally, we have acquired and are assessing the regulatory and strategic path forward for our portfolio of late stage biosimilar/biobetter antibodies based on Erbitux®, Remicade®, Xolair®, and Simulect® as these may represent nearer term commercial opportunities.

With each of our programs, we aim to tailor our therapies to treat specific stages in the evolution of cancer, from elimination, to equilibrium and escape. In addition, our objective is to focus on tumors that are resistant to current treatments and where we can design trials based on a genetic signature or biomarker to ensure patients have the best chance of a durable and significant response.

We have several immuno-oncology programs that are in or near entering the clinic. These include cellular therapies, an oncolytic virus, monoclonal antibodies and a palliative care program targeted to treat intractable cancer pain.

Our cellular therapy programs focus on Chimeric Antigen Receptor-T Cell ("CAR-T") for adoptive cellular immunotherapy to treat both solid and liquid tumors. We have reported early data from Phase I trials of our carcinoembryonic antigen ("CEA") and PSMA directed CAR-T programs. Our CD38 CAR-T is being evaluated in the context of highly resistant multiple myeloma ("MM"), amyloidosis and graft-versus-host disease ("GvHD"). We are assessing our CD123 CAR-T in the context of highly resistant acute myeloid leukemia ("AML"). Both of the latter programs have successfully demonstrated strong preclinical anti-tumor activity in animal models. Our plan is to submit Investigational New Drug ("IND") applications with the U.S. Food and Drug Administration (the "FDA") for at least one of these CAR-T programs in 2017.

Finally, as part of our global aim to provide a wide range of therapeutic products to meet underserved therapeutic markets, we have made investments and developed a separate pain focused franchise which we believe will serve to provide short term upside to our core thesis. Within this franchise, resiniferatoxin ("RTX") is a non-opioid-based TRPV1 agonist neurotoxin used as an injectable pain treatment. The compound RTX has been granted orphan drug status for the treatment of intractable pain at end-stage disease. We have conducted a Phase I trial with the National Institutes of Health ("NIH") and are exploring a path to accelerated approval with a Phase II, multicenter trial to be initiated in late 2017.

Our Strategy

Our primary goal is to deliver clinically meaningful therapies to patients and their families, globally. In immuno-oncology, we aim to deliver next generation therapeutics to transform cancer into a treatable or chronically manageable disease. Across all our programs, we are focused on addressing severe unmet medical needs where our therapies can change the natural course of disease or significantly improve a patient's quality of life.

Our core strategic objectives and resources are focused on:

1. Advancing our lead product candidates through the clinic. These include the initiation of Phase I, Phase II and potentially accelerated approval trials for our cellular therapies, oncolytic virus immunotherapy and RTX in oncology and/or hematology indications.
2. Continuing the development of our preclinical programs with the aim of filing several new INDs over the next 5 years. These include moving our checkpoint inhibitors from our core antibody portfolio into the clinic with several of our strategic partners, while internally focusing on advancing our transformational intracellular targeting antibodies ("iTAbs"), with LA Cell.
3. Collaborating with key opinion leaders and leading clinical and research institutes to enhance our preclinical and clinical development plans. We currently have such agreements in place with the Karolinska Institute, The Scripps Research Institute ("TRSI"), the NIH, City of Hope, Tufts Medical School, and Roger Williams Medical Center, among others.
4. Manufacturing our preclinical and clinical materials in-house. We have established a quality control and quality assurance program, which includes a set of standard operating procedures and specifications designed to ensure that our products are manufactured in accordance with current good manufacturing practices ("cGMPs"), and other applicable domestic and foreign regulations.
5. Exploring strategic relationships to share in the risk reward of our core franchises and to derive near term value from our non-core franchise, such as our pain franchise. Our partnering objectives include generating revenue through license fees, milestone-related development fees and royalties as well as profit shares or joint ventures to generate potential returns from our product candidates and technologies.

Segment Information and Financial Information about Geographic Areas

We have determined that we operate in one operating segment. See Note 3 to the notes to our consolidated financial statements accompanying this Form 10-K for further information. All of our revenues from continuing operations are essentially attributed to the United States. All of our long-lived assets are essentially located within the United States.

Pipeline and Product Candidates

An overview of our core programs is provided in the table below:

Near Term Clinical Programs

Cellular Therapies

With our cellular therapy subsidiary, TNK Therapeutics, Inc. ("TNK"), we are focusing on the development of Chimeric Antigen Receptor ("CAR")-based immunotherapies using autologous T-cells.

T-007: CD38 Directed CAR-T Program

Our most advanced cellular therapy is T-007, a proprietary, second generation anti-CD38 CAR-T therapy, which we are developing for the treatment of multiple myeloma and for additional potential indications including amyloidosis and graft-versus-host disease. Our anti-CD38 CAR-T is based on a fully human anti-CD38 mAb derived from our G-MAB™ antibody library.

The membrane glycoprotein CD38 is widely found on the surface of lymphoid and myeloid lineages including B, T and NK cells, but absent from most mature resting lymphocytes with the notable exception of terminally differentiated plasma cells. Because CD38 is highly expressed on multiple myeloma cells, it represents a valuable and validated therapeutic target against myeloma. Multiple myeloma (MM) is a hematologic malignancy in which clonal plasma cells accumulate in the bone marrow or extramedullary sites and give rise to clinical complications such as painful, lytic bone lesions, hypercalcemia, renal impairment, cytopenias, and symptomatic plasmacytomas.

The American Cancer Society estimate 30,280 new cases and 12,590 deaths from multiple myeloma in the U.S. during 2017. The anti-CD38 monoclonal antibody DARZALEX® (daratumumab), marketed by Janssen Oncology, was granted accelerated approval by the FDA for the treatment of multiple myeloma on November 16, 2015. Worldwide net sales of DARZALEX® were $572 million in 2016. We are encouraged by the validation of this important target in the market for multiple myeloma therapeutics and its rapid adoption by clinicians in the myeloma community. We believe our CD38 cellular therapy will provide an additional significant advance in the CD38 blockade for multiple myeloma patients that are resistant or have failed current therapies.

Pre-clinically, T-007 has demonstrated specific activation through the anti-CD38 CAR resulting in the production of cytokines and CAR-T proliferation. In vitro models have shown that CD38-expressing multiple myeloma tumor cells were killed efficiently, and T-007 completely eradicated tumors in a xenograft mouse model of human myeloma. Importantly, T-007 selectively lysed multiple myeloma target cells expressing high levels of CD38 while avoiding the killing of cells with normal or low levels of CD38. We believe this unique characteristic may result in a more tolerable safety profile in humans and enable a more effective manufacturing process of our anti-CD38 CAR-T cells since we do not anticipate to require a genetic CD38 knock-out or knock-down in our construct.

We believe T-007 benefits from 3 key advantages:

1. Non-Immunogenic: T-007 is based on a fully human mAb generated from our GMAB® library. Fully human mAbs generally do not have the immunogenicity concerns that arise from the mouse antibody sequence found in most current CARs. This may result in a potentially more tolerable CAR-T regimen, and a more durable long term response.
2. Selective Lysing of High Expressing CD38 Positive Cells: Ability to selectively lyse CD38 high expression cells only, may limit on-target / off-tumor toxicity.
3. Has Not Demonstrated Graft versus Host Disease: Our anti-CD38 CAR-T cells did not cause GvHD in vivo. This could have implications on our ability to apply this therapy in an allogeneic setting.

Our intention is to submit an IND for T-007 in 2017, and initiate a Phase I trial shortly thereafter.

T-009: CD123 Directed CAR-T Program

T-009 is a proprietary, second generation anti-CD123 CAR-T therapy which we are developing for the treatment of AML, also known as acute myelogenous leukemia or acute non-lymphocytic leukemia, a cancer of the myeloid line of blood cells, characterized by the rapid growth of abnormal white blood cells that accumulate in the bone marrow and interfere with the production of normal blood cells. AML is the most common acute leukemia affecting adults, and its incidence increases with age. The American Cancer Society estimates 21,380 new cases and 10,590 deaths from acute myeloid leukemia in the U.S. during 2017. Our anti-CD123 CAR-T is based on a fully human anti-CD123 mAb derived from our G-MAB™ antibody library.

CD123 is overexpressed in a variety of hematological neoplasms, including AML, blastic plasmacytoid dendritic cell neoplasm (BPDCN), acute lymphoblastic leukemia (“ALL”), chronic myeloid leukemia (“CML”), Hodgkin’s lymphoma and hairy cell leukemia. The overexpression of CD123 has been clinically correlated with a lower survival rate in AML patients and thus, we believe our T-009 could provide an important therapy in this disease.

To date, T-009 has demonstrated specific activation resulting in the production of cytokines and CAR-T proliferation. T-009 has selectively lysed CD123-expressing AML tumor cells in vitro, and strongly suppressed the growth of established tumors in a xenograft mouse model of human AML. Upon the completion of our preclinical testing of T-009, we will plan to submit an IND for first in human trials in AML.

Technologies and Preclinical Pipeline

G-MAB™: Fully Human Antibody Library Platform

Our G-MAB™ library, which forms the backbone of many of our product candidates, was initially invented by Henry Ji, Ph.D., our co-founder, President and Chief Executive Officer. We believe our proprietary G-MAB™ library is one of the industry’s largest and most diverse fully human antibody libraries, with an estimated one quadrillion unique antibodies available for drug discovery and development. We believe G-MAB™ may offer the following advantages over competing antibody libraries:

- G-MAB™ has been designed to provide a full spectrum of human immunoglobulin gene recombination in fully-human mAbs. Unlike chimeric and humanization technologies, G-MAB™ has allowed the generation of antibodies with fully-human protein sequences without the challenges and limitations of animal-to-human gene transfer procedures.
- Because G-MAB™ represents an in vitro human mAb library technology, research suggests that it enables faster and cost-effective in vitro screening of a large number of antigens. G-MAB™ is designed so that any antigen of interest can be investigated, with no dependence on the successful induction of a host immune response against the antigen.

The following is a depiction of the types of fully human mAbs that we have derived from G-MAB™. It includes antibodies that bind to a wide range of targets, from small molecular weight antigens to large protein complexes antigens, such as G-Protein Coupled Receptors ("GPCRs"), a difficult class of antigens to raise therapeutic antibodies against.

Our objective is to leverage G-MAB™ to develop first in class or best in class antibody drug candidates that will possess greater efficacy and fewer side effects as compared to existing drugs and develop them as novel monotherapies, ADCs (such as c-MET), components of bispecific antibodies, and as part of our adoptive immunotherapy (CD38, CD123) and intracellular targeting programs (STAT3, mutant KRAS).

To date, we have screened over 100 validated targets and generated a number of fully human antibodies against these targets which are at various stages of development. These include PD-1, PD-L1, CD38, CD123, CD47, c-MET, VEGFR2, CCR2, OX40, TIGIT and CD137 among others. Upon the completion of preclinical studies, our objective is to, independently or in tandem with our strategic collaborators, file INDs for these product candidates.

The following diagrams highlight our key antibody-related strategic partnerships and programs:

LA Cell: Intracellular Targeting Antibodies (iTAbs)

With LA Cell, our exclusive joint venture with City of Hope, our objective is to become the global leader in the development of modified antibodies and other macromolecules against intracellular targets. Our internal research suggests that LA Cell's platform is highly disruptive in that it uniquely enables the penetration of large molecules such as antibodies, peptides and modified DNA into disease cells.

We are looking to apply this technology to specifically modulate formerly "undruggable" targets known in the evolution of cancer, inflammation, autoimmune diseases, diabetes, central nervous system diseases, cardiovascular diseases and viral infections.

Antibodies and other protein based therapeutics, compared to other drug modalities, have the advantage of specificity, ease of creation and long-lasting effects in vivo. Although these therapies have benefited many patients across many solid and hematological malignancies, they are currently constrained in their ability to target solely extracellular proteins, either secreted or membrane bound. Separately, small molecule drugs are less specific, depend on defined hydrophobic binding pockets and have proven difficult to administer long term given their many off-target toxicities.

In contrast, LA Cell's proprietary technology and iTAbs enable the ability to modulate intracellular targets with modified antibodies derived from our G-MAB™ library. Our lead product candidates focus on key "undruggable" disease targets, such as STAT3, mutant KRAS, MYC and FOXP3 and we have designed constructs which are at various stages of in vitro and in vivo testing.

STAT3 iTAb

Our lead iTAb is targeted against STAT3 and has demonstrated the inhibition of STAT3 through phosphorylation and downstream gene modulation as well as cytotoxic/cytostatic activity in multiple human cancer cells in vitro. STAT3 is a master regulator of genes controlling cell proliferation, survival, migration and immune suppression which is highly upregulated in human cancers. Persistent STAT3 activation has been shown to lead to abnormal survival and tumorigenesis with constitutive STAT3 activation reported in 50-90% of human cancers. This prevalence can be attributed to STAT3's position as the convergence point of several major oncogenic signaling including EGFR, HER2/Neu, platelet-PDGFR, IL-6R/gp130, c-MET, ABL and Src tyrosine kinases. We believe our STAT3 iTAb will be useful in the treatment of severely undertreated cancers such as glioblastoma. STAT3 has emerged as a key initiator and master regulator of mesenchymal transformation in malignant gliomas. We have completed in vitro and pharmacokinetic work and are currently conducting in vivo validation of this iTAb.

Mutant KRAS iTAb

Our second most advanced iTAb is targeted against mutant KRAS. 30% of human cancers possess activating RAS mutations, 85% of which are KRAS mutations which are most frequently present in colorectal, pancreatic and lung cancers. In vitro, our $KRAS^{G12D}$ iTAb has demonstrated specific cytotoxic activity only in $KRAS^{G12D}$-expressing cancer cells but not in wild-type KRAS cells.

Biosimilar Antibody Portfolio

In August 2015, we entered into an exclusive licensing agreement with Mabtech Limited to develop and commercialize four, late-stage clinical biosimilar or biobetter antibodies based on Erbitux®, Remicade®, Xolair® and Simulect® for the North American, European and Japanese markets. Each of these four antibody programs has completed Phase 3 clinical trials in China. We are assessing the regulatory and strategic path forward for this portfolio due to the fact that, if we are to follow the biosimilar route, we will be required to perform comparative studies versus the reference products in the U.S. and EU.

Pain Franchise

Our pain franchise consists of Scilex Pharmaceuticals Inc. (“Scilex”), a private company which we acquired a majority interest in November 2016, and our subsidiary, Scintilla Pharmaceuticals, Inc. (“Scintilla”), which houses our RTX program as depicted below:

RTX

RTX is a small molecule with a non-opiate mechanism of action that may permanently eliminate intractable cancer pain experienced by end-stage cancer patients. When injected intraspinally or paraspinally, RTX directly interacts with nerve cells expressing TRPV1 receptors without affecting normal sensation (touch and vibration sense) or muscle function. RTX has been extensively tested in animals and was tested in an investigator-sponsored Phase I clinical trial at the NIH under a Cooperative Research and Development Agreement (CRADA). To date, 12 patients with terminal cancer pain have been treated at the NIH.

The mechanism of action for RTX is well understood and has been validated by extensive data in both animals and humans. In chronic pain states, TRPV1 is upregulated and expressed to a greater degree, resulting in central hypersensitivity and pathological pain states. When the drug is delivered via intrathecal injection, through a catheter placed in the cerebrospinal fluid space, it targets and binds to TRPV1 receptors expressed by specific neurons in dorsal root ganglia and the superficial layers of the dorsal horn of the spinal column. RTX binding to TRPV1 results in calcium influx, which initiates programmed cell death (apoptosis) of only the targeted neurons and, therefore, results in the permanent reduction of pain transmitted by these TRPV1 positive neurons.

We expect to initiate a dose finding study using epidural administration of RTX in 2017. Given our prior clinical experience with RTX, we expect that the drug will be very well tolerated at all doses and that we will see a dose response. We have hired a contract manufacturer to produce the current good manufacturing practices (“cGMP”) drug substance and have sufficient material to complete the clinical development. We have also secured enough raw materials to cover the commercial needs for several years, including the drug product, also produced by a contract manufacturer, for which we have sufficient vials in storage to complete clinical development. Our plan is to apply for FDA Breakthrough Therapy Designation and potentially initiate pivotal Phase II trials by the end of 2017.

Scilex Pharmaceuticals: ZTlido™

Scilex leverages its core, proprietary technologies to responsibly develop next generation, branded pharmaceutical products to better manage critical conditions and maximize the quality of life of patients and healthcare providers. Scilex’s lead product candidate, ZTlido™ (lidocaine patch 1.8%), is a next-generation lidocaine patch currently in development for the treatment of postherpetic neuralgia (“PHN”), a severe neuropathic pain condition. ZTlido™ is manufactured by our collaboration partner in their state of the art manufacturing facility.

The elderly population, individuals that have suffered a shingles infection, HIV/AIDS and cancer patients are at highest risk of contracting PHN. In the 2016 Centers for Disease Control and Prevention Guideline for Prescribing Opioids in Chronic Pain, topical

lidocaine is recommended for the treatment of neuropathic pain. The prescription lidocaine patch market for all indications totaled almost $700 million in 2015 in the U.S.

ZTlido™'s anhydrous patch is based on a novel and proprietary technology that contains only 36 mg of lidocaine versus Lidoderm® (lidocaine patch 5%), which holds 700 mg of lidocaine per patch. In December 2016 and January 2017, Scilex reported key endpoints were met in the pivotal bioequivalence clinical trials for ZTlido™. The full data package is expected to be resubmitted to the FDA as part of the 505(b)(2) new drug application ("NDA") in mid-2017 (the initial filing was not accepted by the FDA) and filed with the Medicines and Healthcare products Regulatory Agency ("MHRA") in the United Kingdom as part of a hybrid Marketing Authorization Application ("MAA") in mid-2017.

Recent Developments

Yuhan Agreement

In March 2016, we and Yuhan Corporation, a South Korea company ("Yuhan"), entered into an agreement to form a joint venture company called ImmuneOncia Therapeutics, LLC ("ImmuneOncia") to develop and commercialize a number of immune checkpoint antibodies against undisclosed targets for both hematological malignancies and solid tumors. In April 2016, Yuhan purchased $10.0 million of shares of our common stock, $0.0001 par value per share ("Common Stock"), and warrants as part of our private placement offering. Separately, under the terms of the joint venture agreement, Yuhan contributed an initial investment of $10.0 million to ImmuneOncia, and we granted ImmuneOncia an exclusive license to one of our immune checkpoint antibodies for specified countries while retaining the rights for the U.S., European and Japanese markets, as well as global rights for ImmuneOncia to two additional antibodies that will be selected by ImmuneOncia from a group of pre-specified antibodies from our immuno-oncology antibody portfolio. Yuhan owns 51% of ImmuneOncia, while we own 49%.

3SBio Term Sheet

In June 2016, we and TNK entered into a binding term sheet with Shenyang Sunshine Pharmaceutical Company Ltd ("3SBio"), a China based company, to form a joint venture to develop and commercialize proprietary immunotherapies, including those developed from, including or using TNK's CAR-T technology targeting CEA positive cancers. Due diligence and negotiations between 3SBio and us for the definitive agreement(s) are currently ongoing. In June 2016, 3SBio purchased $10.0 million of Common Stock and warrants as part of our private placement offering.

Servier License and Collaboration Agreement

In July 2016, we announced a license and collaboration agreement with Les Laboratoires Servier, SAS, a corporation incorporated under the laws of France, and Institut de Recherches Internationales Servier, a company duly organized and existing under the laws of France (individually and collectively, "Servier") for the development, manufacture and commercialization of products using our fully human immuno-oncology anti-PD-1 mAb STI-A1110. The financial terms of the agreement include, among other things, a non-refundable upfront payment to us of €25 million, or $27.4 million, which we received in July 2016. We may also receive development milestone payments for the initial product and each additional product. We may receive up to €710 million in various payments based on commercial sales milestones related to annual net sales levels for the initial product and then also for each additional product. In addition to the commercial sales milestones, we will be entitled to receive variable royalties on the sales of all commercialized products ranging from high single-digit to double-digit percentages. During the twelve months ended December 31, 2016, we recognized $3.8 million in license fee revenue pursuant to the agreement.

CHA Biotech Term Sheet

In August 2016, we announced a binding term sheet to create a joint venture (the "JV") with CHA Biotech Co., LTD. ("CBT") of South Korea to develop and commercialize proprietary CAR modified cellular therapies based on CBT's

Activated Killer Cell (“AKC”) technology in combination with five of our CARs for all disease conditions, including oncology and infectious diseases. The JV will cover products on a global basis with the exception of the greater Chinese market, which includes Mainland China, Hong Kong, Macau and Taiwan. In addition, we will obtain an exclusive license to develop and commercialize CBT’s novel investigator-initiated trial stage AKC technology in major territories, including the United States and Europe, and with a co-exclusive license in China. Under the terms of the Term Sheet, we and CBT will make contributions of $2 million to the JV, and we will grant the JV an exclusive license to five CARs solely for combination with the AKC technology, while CBT will contribute its AKC technology. CBT will initially own 51% of the JV while we will initially hold the remaining 49%. We, under a royalty bearing license, will also gain access to the AKC technology for the use outside the JV alone or with any other of our product candidates. Due diligence and negotiations between CBT and us for the definitive agreement(s) are currently ongoing. However, the binding term sheet is currently terminable by either party at will and no assurances can be made that the transaction will be completed.

Scilex Acquisition

On November 8, 2016, we entered into a Stock Purchase Agreement with Scilex and a majority of the stockholders of Scilex (the "Scilex Stockholders") pursuant to which we acquired from the Scilex Stockholders approximately 72% of the outstanding capital stock of Scilex. Scilex's lead product candidate, ZTlido™, is a next-generation lidocaine patch currently in development for the treatment of PHN, a severe neuropathic pain condition. ZTlido™ is manufactured by our collaboration partner in their state of the art manufacturing facility.

Celularity Transaction

In November 2016, we entered into a non-binding term sheet between us, our subsidiary, TNK, and Celularity, Inc. ("Celularity"), a research and development company, setting forth the terms and conditions by which we or TNK with one or more third parties would contribute certain assets to Celularity (the "Celularity Transaction"). In addition, at this time, we loaned $5.0 million to Celularity pursuant to a promissory note issued to us (the "Celularity Note"). Pursuant to the terms of the Celularity Note, the loan will be due and payable in full on the earlier of November 1, 2017 and the occurrence of an event of default under the Celularity Note (the "Maturity Date"). The Celularity Note also provides that, in certain circumstances, we will loan Celularity up to an additional $5.0 million over the next 12 months. In the event that Celularity meets certain minimum financing conditions prior to the Maturity Date, all outstanding amounts under the Celularity Note will be forgiven.

Binding Term Sheet Regarding Acquisition of Semnur Pharmaceuticals, Inc.

On August 15, 2016, we, Scintilla and Semnur Pharmaceuticals, Inc. ("Semnur") entered into a binding term sheet (the "Semnur Binding Term Sheet") setting forth the terms and conditions by which Scintilla will, through a subsidiary, purchase all of the issued and outstanding equity of Semnur (the "Semnur Acquisition"). The Semnur Binding Term Sheet provides that, contingent upon the execution of a definitive agreement between the parties (the "Definitive Agreement") and subject to certain conditions, Scintilla will, at the closing of the Semnur Acquisition (the "Semnur Closing"), make an initial payment of $60.0 million (the "Initial Consideration") to the equityholders of Semnur in exchange for all of the issued and outstanding equity of Semnur. The Initial Consideration will consist of $40.0 million in cash and $20.0 million in shares of our common stock (the "Semnur Stock Consideration"). The Semnur Binding Term Sheet also provides that the number of shares of our common stock comprising the Semnur Stock Consideration will be calculated based on the volume weighted average closing price of our common stock for the 30 consecutive trading days ending on the date that is three days prior to the execution of the Definitive Agreement. $6.0 million of the Semnur Stock Consideration will be placed into escrow, a portion of which will be held for a period of up to six or 12 months to secure certain obligations of Semnur and its equityholders in connection with the Semnur Acquisition. At the Semnur Closing, we will enter into a registration rights agreement with certain of Semnur's equityholders, pursuant to which we will agree to seek the registration for resale of the shares of our common stock comprising the Semnur Stock Consideration.

In addition to the Initial Consideration, Scintilla may pay additional consideration of up to $140.0 million to Semnur's equityholders upon Scintilla's completion of certain clinical studies and trials, receipt of certain regulatory approvals and the achievement of certain sales targets following the Semnur Closing.

Under the Semnur Binding Term Sheet, either party may terminate the Semnur Binding Term Sheet.

As of December 31, 2016, the Semnur Acquisition had not closed. The final terms of the Semnur Acquisition are subject to the negotiation and finalization of the Definitive Agreement and any other agreements relating to the Semnur Acquisition, and the material terms of the Semnur Acquisition are expected to differ from those set forth in the Semnur Binding Term Sheet. In addition, the Semnur Closing will be subject to various customary and other

closing conditions.

A member of our board of directors is Semnur's Chief Executive Officer and a member of Semnur's Board of Directors and currently owns approximately 5.5% of Semnur's total outstanding capital stock. Joseph Gunnar & Co., LLC provided an opinion to our board of directors opining that the consideration to be paid by Scintilla in the Semnur Acquisition is fair, from a financial point of view, to our stockholders.

Binding Term Sheet Regarding Acquisition of Virttu Biologics Limited

On November 15, 2016, we, TNK and Virttu Biologics Limited ("Virttu") entered into a binding term sheet (the "Virttu Binding Term Sheet") setting forth the terms and conditions by which TNK will purchase all of the issued and outstanding equity of Virttu (the "Virttu Acquisition"). Subject to certain conditions, at the closing of the Virttu Acquisition (the "Virttu Closing"), we will issue to the equityholders of Virttu an aggregate of $5.0 million of shares of our common stock (the "Closing Shares"). The number of Closing Shares issuable shall be determined based on the closing price of our common stock on the date of the Virttu Closing. Further, upon the occurrence of the closing of the next third party equity financing of TNK in which TNK receives at least $50.0 million in

proceeds (a "Financing"), TNK will issue to the equityholders of Virttu an aggregate of $20.0 million of shares of the same class and series of capital stock of TNK as is issued in such Financing, based upon the valuation of TNK achieved in such Financing (the "TNK Financing Shares"). If a Financing has not occurred within twelve months of the Virttu Closing (the "Financing Due Date"), the equityholders of Virttu will be issued an aggregate of $20.0 million of shares of our common stock in lieu of the TNK Financing Shares (the "Sorrento Financing Shares"). The number of Sorrento Financing Shares issuable shall be determined based on the closing price of our common stock on the Financing Due Date. In the event that the TNK Financing Shares are issued, 20% of the TNK Financing Shares will be placed into escrow until the Financing Due Date to secure the indemnification obligations of Virttu and its equityholders for breaches of their representations, warranties or covenants under the definitive agreements governing the Virttu Acquisition. The Closing Shares and the TNK Financing Shares or the Sorrento Financing Shares will be issued to the Virttu equityholders on a pro rata basis based on each such equityholder's equity interest in Virttu as of the Virttu Closing.

As of December 31, 2016, the Virttu Acquisition had not closed. The final terms of the Virttu Acquisition are subject to the negotiation and finalization of the definitive agreements relating to the Virttu Acquisition and the material terms of the Virttu Acquisition may differ from those set forth in the Virttu Binding Term Sheet. In addition, the Virttu Closing will be subject to various customary and other closing conditions.

See the section entitled "Risk Factors" in this Form 10-K for a discussion of some of the risks relating to the execution of our business strategy.

Patents and Other Proprietary Rights

We are able to protect our technology from unauthorized use by third parties only to the extent that it is covered by valid and enforceable patents, is effectively maintained as a trade secret, or is protected by confidentiality agreements. Accordingly, patents and other proprietary rights are essential elements of our business.

We have multiple issued patents and pending patent applications in the U.S. and in selected foreign jurisdictions that cover our G-MAB™ technology, G-MAB™-derived antibodies, other proprietary antibody-centric technologies, and pain management compounds, including, but not limited to, the following:

1) The G-MAB™ discovery antibody library technology. Certain aspects of this technology are covered by issued patents and are the subject matter of pending patent applications with potential patent coverage to at least 2023.
2) The G-MAB™-derived immuno-oncology antibody candidate portfolio. Certain of these antibody candidates are covered by issued patents and are the subject matter of pending applications with potential patent coverage to at least 2033.
3) The bispecific antibody technology directed to the combination of one or more different monoclonal antibodies or fragments that can target multiple or different antigens. The bispecific antibody technology is the subject matter of pending applications with potential patent coverage to at least 2035.
4) The ADC technology using proprietary conjugation chemistries (called C-Lock and K-Lock), initially developed by Concortis Biosystems, Corp., (Concortis), one of our wholly-owned subsidiaries. This ADC technology is the subject matter of pending patent applications with potential patent coverage to at least 2034. Additional pending patent applications directed to different toxin derivatives, are the subject matter of pending applications with potential patent coverage to at least 2035.
5) The CAR T-Cell based technology is an immunotherapy platform and is the subject matter of pending patent applications with potential patent coverage to at least 2035. Candidates arising from the platform are the subject matter of pending applications with potential patent coverage to at least 2037.
6) The CAR adoptive cellular immunotherapy using T cells and NK immune cells is directed to helping a patient's immune system fight disease, including cancer. We have filed patent applications on the techniques for creating

such therapies based on our CAR combination therapies providing with potential patent coverage to at least 2036.

7) The intracellular targeting antibody (iTAb) technology (LA Cell) for targeting intracellular targets for treating disease is the subject matter of pending patent applications with potential patent coverage to at least 2036. We have filed patent applications on improvements to this technology with potential patent coverage to at least 2038.
8) The new biosimilar / biobetter antibody technology using manufacture in certain cells (for example, directed to antigen targets such as EGFR or TNF-alpha) is the subject matter of pending patent applications with potential patent coverage to at least 2035.

9) The RTX (resiniferatoxin)-based pain management technology. Certain aspects of this technology are covered by an issued patent in the U.S. providing patent protection to 2021 and are the subject matter of pending patent applications that will provide potential patent coverage to at least 2036.
10) The lidocaine-based pain management technology, obtained by acquisition of Scilex Pharmaceuticals Inc. Certain aspects of this technology are covered by an issued U.S. patent with patent coverage to 2031. Additional patent applications to improvements of this technology have been filed with potential patent coverage to at least 2038.

Certain factors can either extend patent term or provide other forms of exclusivity (e.g., data exclusivity) for varying periods depending on the date of patent filing, date of grant or the legal term of a patent in the various jurisdictions in which patent protection is obtained. The actual protection afforded by a patent, which can vary from country to country, also depends upon the type of patent, the scope of claim coverage and the availability of legal remedies in the particular country.

While trade secret protection is an essential element of our business and we have taken security measures to protect our proprietary information and trade secrets, we cannot guarantee that our unpatented proprietary technology will afford us significant commercial protection. We seek to protect our trade secrets by entering into confidentiality agreements with third parties, employees and consultants. Our employees and consultants also sign agreements requiring that they assign to us their interest in any intellectual property arising from their work for us. All employees sign an agreement not to engage in any conflicting employment or activity during their employment with us and not to disclose or misuse our confidential information. However, it is possible that these agreements may be breached or invalidated and, if so, there may not be an adequate corrective remedy. Accordingly, we cannot guarantee that employees, consultants or third parties will not breach the confidentiality provisions in our contracts, infringe or misappropriate our trade secrets or other proprietary rights, or that measures we are taking to protect our proprietary rights will be adequate.

In the future, third parties may file claims asserting that our technologies or products infringe on their intellectual property. We cannot predict whether third parties will assert such claims against us or against the licensors of technology licensed to us, or whether those claims will harm our business. If we are forced to defend ourselves against such claims, whether they are with or without merit and whether they are resolved in favor of, or against, our licensors or us, we may face costly litigation and the diversion of management’s attention and resources. As a result of such disputes, we may have to develop costly non-infringing technology or enter into licensing agreements. These agreements, if necessary, may be unavailable on terms acceptable to us, or at all.

Government Regulation

Government authorities in the U.S. (including federal, state and local authorities) and in other countries extensively regulate, among other things, the manufacturing, research and clinical development, marketing, labeling and packaging, storage, distribution, post-approval monitoring and reporting, advertising and promotion, pricing and export and import of pharmaceutical products, such as those we are developing. 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. Moreover, failure to comply with applicable regulatory requirements may result in, among other things, warning letters, clinical holds, civil or criminal penalties, recall or seizure of products, injunction, disbarment, partial or total suspension of production or withdrawal of the product from the market. Any agency or judicial enforcement action could have a material adverse effect on us.

U.S. Government Regulations

In the U.S., the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act (“FDCA”), and its implementing regulations. Drugs are also subject to other federal, state and local statutes and regulations. The process required by the FDA before product candidates may be marketed in the U.S. generally involves the following:

•

submission to the FDA of an IND, which must become effective before human clinical trials may begin and must be updated annually;

- completion of extensive preclinical laboratory tests and preclinical animal studies, all performed in accordance with the FDA's Good Laboratory Practice ("GLP") regulations. Preclinical testing generally includes evaluation of our product candidates in the laboratory or in animals to characterize the product and determine safety and efficacy;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the product candidate for each proposed indication;
- submission to the FDA of a Biologics License Application ("BLA") or an NDA after completion of all pivotal clinical trials;
- a determination by the FDA within 60 days of its receipt of a BLA or an NDA to file the NDA for review;

- satisfactory completion of an FDA pre-approval inspection of the manufacturing facilities at which the active pharmaceutical ingredient ("API") and finished drug product are produced and tested to assess compliance with cGMP regulations; and
- FDA review and approval of a BLA or an NDA prior to any commercial marketing or sale of the drug in the U.S.

In addition, we are subject to regulation under state, federal, and international laws and regulations regarding occupational safety, laboratory practices, import and export of materials and products, environmental protection and the use and handling of hazardous substance control, and other regulations. Our clinical trial and research and development activities involve the controlled use of hazardous materials and chemical compounds. Although we believe that our safety procedures for handling and disposing of such materials comply with the standards prescribed by state and federal regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result and any such liability could exceed our financial resources. In addition, disposal of radioactive materials used in our clinical trials and research efforts may only be made at approved facilities. We believe that we are in material compliance with all applicable laws and regulations including those relating to the handling and disposal of hazardous and toxic waste.

An IND is a request for authorization from the FDA to administer an investigational drug product to humans. The central focus of an IND submission is on the general investigational plan and the protocol(s) for human studies. The IND also includes results of animal studies or other human studies, as appropriate, as well as manufacturing information, analytical data and any available clinical data or literature to support the use of the investigational new drug. An IND must become effective before human clinical trials may begin. An IND will automatically become effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to the proposed clinical trials. 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 clinical trials can begin. Accordingly, submission of an IND may or may not result in the FDA allowing clinical trials to commence.

Clinical trials involve the administration of the investigational drug to human subjects under the supervision of qualified investigators in accordance with Good Clinical Practices ("GCPs"), which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. 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 efficacy criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. Additionally, approval must also be obtained from each clinical trial site's institutional review board ("IRB") before the trials may be initiated, and the IRB must monitor the study until completed. There are also requirements governing the reporting of ongoing clinical trials and clinical trial results to public registries.

The clinical investigation of a drug is generally divided into three phases. Although the phases are usually conducted sequentially, they may overlap or be combined. The three phases of an investigation are as follows:

- Phase I. Phase I includes the initial introduction of an investigational new drug into humans. Phase I clinical trials are typically closely monitored and may be conducted in patients with the target disease or condition or in healthy volunteers. These studies are designed to evaluate the safety, dosage tolerance, metabolism and pharmacologic actions of the investigational drug in humans, the side effects associated with increasing doses, and if possible, to gain early evidence on effectiveness. During Phase I clinical trials, sufficient information about the investigational drug's pharmacokinetics and pharmacological effects may be obtained to permit the design of well-controlled and scientifically valid Phase II clinical trials. The total number of participants included in Phase I clinical trials varies, but is generally in the range of 20 to 80.
- Phase II. Phase II includes controlled clinical trials conducted to preliminarily or further evaluate the effectiveness of the investigational drug for a particular indication(s) in patients with the disease or condition under study, to determine dosage tolerance and optimal dosage, and to identify possible adverse side effects and safety risks associated with the drug. Phase II clinical trials are typically well-controlled, closely monitored, and conducted in a limited patient population, usually involving no more than several

hundred participants.

- Phase III. Phase III clinical trials are generally controlled clinical trials conducted in an expanded patient population generally at geographically dispersed clinical trial sites. They are performed after preliminary evidence suggesting effectiveness of the drug has been obtained, and are intended to further evaluate dosage, clinical effectiveness and safety, to establish the overall benefit-risk relationship of the investigational drug product, and to provide an adequate basis for product approval. Phase III clinical trials usually involve several hundred to several thousand participants.

A pivotal trial is a clinical trial that adequately meets regulatory agency requirements for the evaluation of a drug candidate's efficacy and safety such that it can be used to justify the approval of the product. Generally, pivotal trials are also Phase III trials but may be Phase II trials if the trial design provides a well-controlled and reliable assessment of clinical benefit, particularly in situations where there is an unmet medical need.

The FDA, the IRB or the clinical trial sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group provides authorization for whether or not a trial may move forward at designated check points based on access to certain data from the study. We may also suspend or terminate a clinical trial based on evolving business objectives and/or competitive climate.

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, detailed investigational drug product information is submitted to the FDA in the form of an NDA requesting approval to market the product for one or more indications.

The application includes all relevant data available from pertinent preclinical and clinical trials, 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 trials intended to test the safety and effectiveness of a use of a product, or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and effectiveness of the investigational drug product to the satisfaction of the FDA.

Once the NDA submission has been accepted for filing, the FDA's goal is to review applications within ten months of submission or, if the application relates to an unmet medical need in a serious or life-threatening indication, six months from submission. The review process is often significantly extended by FDA requests for additional information or clarification. The FDA may refer the application to an advisory committee for review, evaluation and recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it typically follows such recommendations.

After the FDA evaluates the NDA and conducts inspections of manufacturing facilities where the drug product and/or its API will be produced, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug 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 require additional clinical data, an additional pivotal Phase III clinical trial(s), and/or other significant, expensive and time-consuming requirements related to clinical trials, preclinical studies or manufacturing. Even if such additional information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. The FDA could also approve the NDA with a Risk Evaluation and Mitigation Strategies ("REMS") plan to mitigate risks, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling, development of adequate controls and specifications, or a commitment to conduct one or more post-market studies or clinical trials. Such post-market testing may include Phase IV clinical trials and surveillance to further assess and monitor the product's safety and effectiveness after commercialization. Regulatory approval of oncology products often requires that patients in clinical trials be followed for long periods to determine the overall survival benefit of the drug.

After regulatory approval of a drug product is obtained, we are required to comply with a number of post-approval requirements. As a holder of an approved NDA, we would be required to report, among other things, certain adverse reactions and production problems to the FDA, to provide updated safety and efficacy information, and to comply with requirements concerning advertising and promotional labeling for any of our products. Also, quality control and manufacturing procedures must continue to conform to cGMP after approval to ensure and preserve the long term stability of the drug product. The FDA periodically inspects manufacturing facilities to assess compliance with cGMP, which imposes extensive procedural, substantive and record keeping requirements. In addition, changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA

approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation 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 rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of our product candidates. 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 NDA, 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. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. Also, new government requirements,

including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our product candidates under development.

Europe/Rest of World Government Regulations

In addition to regulations in the U.S., we will be subject to a variety of regulations in other jurisdictions governing, among other things, clinical trials and any commercial sales and distribution of our products.

Whether or not we obtain FDA approval for a product, we must obtain the requisite approvals from regulatory authorities in foreign countries prior to the commencement of clinical trials or marketing of the product in those countries. Certain countries outside of the U.S. have a similar process that requires the submission of a clinical trial application much like the IND prior to the commencement of human clinical trials. In Europe, for example, a clinical trial application ("CTA") must be submitted to each country's national health authority and an independent ethics committee, much like the FDA and IRB, respectively. Once the CTA is approved in accordance with a country's requirements, clinical trial development may proceed.

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

To obtain regulatory approval of an investigational drug under European Union regulatory systems, we must submit a marketing authorization application. The application used to file the NDA in the U.S. is similar to that required in Europe, with the exception of, among other things, country-specific document requirements. For other countries outside of the European Union, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. In all cases, again, the clinical trials are conducted in accordance with GCP and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

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

Available Special Regulatory Procedures

Formal Meetings

We are encouraged to engage and seek guidance from health authorities relating to the development and review of investigational drugs, as well as marketing applications. In the U.S., there are different types of official meetings that may occur between us and the FDA. Each meeting type is subject to different procedures. Conclusions and agreements from each of these meetings are captured in the official final meeting minutes issued by the FDA.

The European Medicines Agency ("EMA") also provides the opportunity for dialogue with us. This is usually done in the form of Scientific Advice, which is given by the Scientific Advice Working Party of the Committee for Medicinal Products for Human Use ("CHMP"). A fee is incurred with each Scientific Advice meeting.

Advice from either the FDA or EMA is typically provided based on questions concerning, for example, quality (chemistry, manufacturing and controls testing), nonclinical testing and clinical trials and pharmaco-vigilance plans and risk-management programs. Such advice is not legally binding on the sponsor. To obtain binding commitments from health authorities in the U.S. and the European Union, Special Protocol Assessment ("SPA") or Protocol Assistance procedures are available. An SPA is an evaluation by the FDA of a protocol with the goal of reaching an agreement with the sponsor that the protocol design, clinical endpoints and statistical analyses are acceptable to

support regulatory approval of the product candidate with respect to effectiveness in the indication studied. The FDA's agreement to an SPA is binding upon the FDA except in limited circumstances, such as if the FDA identifies a substantial scientific issue essential to determining the safety or effectiveness of the product after clinical trials begin, or if the trial sponsor fails to follow the protocol that was agreed upon with the FDA. There is no guarantee that a trial will ultimately be adequate to support an approval even if the trial is subject to an SPA.

Orphan Drug Designation

The FDA may grant orphan drug designation to drugs intended to treat a rare disease or condition that affects fewer than 200,000 individuals in the U.S., or if it affects more than 200,000 individuals in the U.S., there is no reasonable expectation that the cost of developing and making the drug for this type of disease or condition will be recovered from sales in the U.S. In the European Union, the EMA's Committee for Orphan Medicinal Products ("COMP") grants orphan drug designation to promote the development of products that are intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition

affecting not more than 5 in 10,000 persons in the European Union Community. Additionally, designation is granted for products intended for the diagnosis, prevention or treatment of a life-threatening, seriously debilitating or serious and chronic condition and when, without incentives, it is unlikely that sales of the drug in the European Union would be sufficient to justify the necessary investment in developing the drug or biological product.

In the U.S., orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. In addition, if a product receives the first FDA approval for the indication for which it has orphan designation, the product is entitled to orphan drug exclusivity, which means the FDA may not approve any other application to market the same drug for the same indication for a period of 7 years, except in limited circumstances, such as a showing of clinical superiority over the product with orphan exclusivity.

In the European Union, orphan drug designation also entitles a party to financial incentives such as reduction of fees or fee waivers and 10 years of market exclusivity is granted following drug or biological product approval. This period may be reduced to 6 years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity.

Orphan drug designation must be requested before submitting an application for marketing approval. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

Authorization Procedures in the European Union

Medicines can be authorized in the European Union by using either the centralized authorization procedure or national authorization procedures.

- Centralized procedure. The EMA implemented the centralized procedure for the approval of human medicines to facilitate marketing authorizations that are valid throughout the European Union. This procedure results in a single marketing authorization issued by the EMA that is valid across the European Union, as well as Iceland, Liechtenstein and Norway. The centralized procedure is compulsory for human medicines that are: derived from biotechnology processes, such as genetic engineering, contain a new active substance indicated for the treatment of certain diseases, such as HIV/AIDS, cancer, diabetes, neurodegenerative disorders or autoimmune diseases and other immune dysfunctions, and officially designated orphan medicines.
- For medicines that do not fall within these categories, an applicant has the option of submitting an application for a centralized marketing authorization to the EMA, as long as the medicine concerned is a significant therapeutic, scientific or technical innovation, or if its authorization would be in the interest of public health.
- National authorization procedures. There are also two other possible routes to authorize medicinal products in several countries, which are available for investigational drug products that fall outside the scope of the centralized procedure:
- Decentralized procedure. Using the decentralized procedure, an applicant may apply for simultaneous authorization in more than one European Union country of medicinal products that have not yet been authorized in any European Union country and that do not fall within the mandatory scope of the centralized procedure.
- Mutual recognition procedure. In the mutual recognition procedure, a medicine is first authorized in one European Union Member State, in accordance with the national procedures of that country. Following this, further marketing authorizations can be sought from other European Union countries in a procedure whereby the countries concerned agree to recognize the validity of the original, national marketing authorization.

Priority Review/Standard Review (U.S.) and Accelerated Review (European Union)

Based on results of the Phase III clinical trial(s) submitted in an NDA, upon the request of an applicant, the FDA may grant the NDA a priority review designation, which sets the target date for FDA action on the application at six months. Priority review is granted where preliminary estimates indicate that a product, if approved, has the potential to provide a safe and effective therapy where no satisfactory alternative therapy exists, or a significant improvement

compared to marketed products is possible. If criteria are not met for priority review, the NDA is subject to the standard FDA review period of 10 months. Priority review designation does not change the scientific/medical standard for approval or the quality of evidence necessary to support approval.

Under the Centralized Procedure in the European Union, the maximum timeframe for the evaluation of a marketing authorization application is 210 days (excluding clock stops, when additional written or oral information is to be provided by the applicant in response to questions asked by the CHMP). Accelerated evaluation might be granted by the CHMP in exceptional cases, when a medicinal product is expected to be of a major public health interest, defined by three cumulative criteria: the seriousness of the disease (e.g., heavy disabling or life-threatening diseases) to be treated; the absence or insufficiency of an appropriate alternative

therapeutic approach; and anticipation of high therapeutic benefit. In this circumstance, EMA ensures that the opinion of the CHMP is given within 150 days, excluding clock stops.

There can be no assurance that we or any of our partners would be able to satisfy one or more of these requirements to conduct preclinical or clinical trials or receive any regulatory approvals.

Pharmaceutical Coverage, Pricing and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any drug products for which we obtain regulatory approval. In the U.S. and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend in part on the availability of reimbursement from third-party payors. Third-party payors include government health administrative authorities, managed care providers, private health insurers and other organizations. The process for determining whether a payor will provide coverage for a drug product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the drug product. Third-party payors may limit coverage to specific drug products on an approved list, or formulary, which might not include all of the FDA-approved drugs for a particular indication. Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain FDA approvals. Our product candidates may not be considered medically necessary or cost-effective. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

In 2003, the U.S. government enacted legislation providing a partial prescription drug benefit for Medicare beneficiaries, which became effective at the beginning of 2006. Government payment for some of the costs of prescription drugs may increase demand for any products for which we receive marketing approval. However, to obtain payments under this program, we would be required to sell products to Medicare recipients through prescription drug plans operating pursuant to this legislation. These plans will likely negotiate discounted prices for our products. Further, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the "Healthcare Reform Law"), substantially changed the way healthcare is financed in the U.S. by both government and private insurers. Among other cost containment measures, the Healthcare Reform Law established:

- An annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents;
- A new Medicare Part D coverage gap discount program, in which pharmaceutical manufacturers who wish to have their drugs covered under Part D must offer discounts to eligible beneficiaries during their coverage gap period (the "donut hole"); and
- A new formula that increases the rebates a manufacturer must pay under the Medicaid Drug Rebate Program.

We expect that federal, state and local governments in the U.S. will continue to consider legislation to limit the growth of healthcare costs, including the cost of prescription drugs. Future legislation could limit payments for pharmaceuticals such as the drug candidates that we are developing.

Different pricing and reimbursement schemes exist in other countries. In the European Union, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines, but monitor and control company profits. The downward

pressure on health care costs in general, particularly prescription drugs, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

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

Other Healthcare Laws and Compliance Requirements

If we obtain regulatory approval for any of our product candidates, we may be subject to various federal and state laws targeting fraud and abuse in the healthcare industry. For example, in the U.S., there are federal and state anti-kickback laws that prohibit the payment or receipt of kickbacks, bribes or other remuneration intended to induce the purchase or recommendation of healthcare products and services or reward past purchases or recommendations. Violations of these laws can lead to civil and criminal penalties, including fines, imprisonment and exclusion from participation in federal healthcare programs.

The federal Anti-Kickback Statute prohibits persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce either the referral of an individual, or the furnishing, recommending, or arranging for a good or service, for which payment may be made under a federal healthcare program, such as the Medicare and Medicaid programs. The reach of the Anti-Kickback Statute was broadened by the Healthcare Reform Law, which, among other things, amended the intent requirement of the federal Anti-Kickback Statute and the applicable criminal healthcare fraud statutes contained within 42 U.S.C. § 1320a-7b, effective March 23, 2010. Pursuant to the statutory amendment, a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order 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 civil False Claims Act (discussed below) or the civil monetary penalties statute. Many states have adopted laws similar to the federal Anti-Kickback Statute, some of which apply to the referral of patients for healthcare items or services reimbursed by any source, not only the Medicare and Medicaid programs.

The federal False Claims Act imposes liability on any person who, among other things, knowingly presents, or causes to be presented, a false or fraudulent claim for payment by a federal healthcare program. The “qui tam” provisions of the False Claims Act allow a private individual to bring civil actions on behalf of the federal government alleging that the defendant has submitted a false claim to the federal government, and to share in any monetary recovery. In addition, various states have enacted false claims laws analogous to the False Claims Act. Many of these state laws apply where a claim is submitted to any third-party payer and not merely a federal healthcare program. When an entity is determined to have violated the False Claims Act, it may be required to pay up to three times the actual damages sustained by the government, plus civil penalties of $5,500 to $11,000 for each separate false claim.

Also, the Health Insurance Portability and Accountability Act of 1996 (“HIPAA”) created several new federal crimes, including healthcare fraud, and false statements relating to healthcare matters. The health care fraud statute prohibits knowingly and willfully executing a scheme to defraud any health care benefit program, including private third-party payers. The false statements statute prohibits 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 health care benefits, items or services.

In addition, we may be subject to, or our marketing activities may be limited by HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, which established uniform standards for certain “covered entities” (healthcare providers, health plans and healthcare clearinghouses) and their business associates governing the conduct of certain electronic healthcare transactions and protecting the security and privacy of protected health information.

Antibody Clinical Development

We currently focus our research efforts primarily in the identification and isolation of human antibody drug candidates and further characterize these antibody candidates in in vitro and in vivo functional testing. Due to our limited financial resources, we intend to actively seek product development and commercialization partners from the biopharmaceuticals industry to help us advance the clinical development of select product candidates.

Marketing and Sales

We currently do not have any commercial manufacturing or sales capabilities. We may or may not manufacture the products we develop, if any. We intend to license to, or enter into strategic alliances with, larger companies in the biopharmaceutical businesses, which are equipped to manufacture, market and/or sell our products, if any, through their well-developed manufacturing capabilities, marketing and sales teams and distribution networks. We intend to license some or all of our worldwide patent rights to more than one third party to achieve the fullest development, marketing and distribution of any products we develop.

Manufacturing and Raw Materials

We currently manufacture the majority of our preclinical and clinical materials in-house, and use contract manufacturers for the manufacture of some of our product candidates. Our internal manufacturing and contract manufacturers are subject to extensive governmental regulation. Regulatory authorities in our markets require that pharmaceutical products be manufactured, packaged and labeled in conformity with cGMPs. We have established a quality control and quality assurance program, which includes a set of standard operating procedures and specifications designed to ensure that our products are manufactured in accordance with cGMPs, and other applicable domestic and foreign regulations.

Employees

As of December 31, 2016, we had 154 employees and 21 consultants and advisors. A significant number of our management and our other employees and consultants have worked or consulted with pharmaceutical, biotechnology or medical product companies. While we have been successful in attracting skilled and experienced scientific personnel, there can be no assurance that we will be able to attract or retain the necessary qualified employees and/or consultants in the future.

None of our employees are covered by collective bargaining agreements and we consider relations with our employees to be good.

Research and Development

Our research and development expenses, excluding acquired in-process research and development expenses, totaled $42.2 million and $31.3 million in the years ended December 31, 2016 and 2015, respectively.

Corporate Information

On September 21, 2009, QuikByte Software, Inc., a Colorado corporation and shell company (“QuikByte”), consummated its acquisition of Sorrento Therapeutics, Inc., a Delaware corporation and private concern (“STI”), in a reverse merger (the “Merger”). Pursuant to the Merger, all of the issued and outstanding shares of STI common stock were converted into an aggregate of 6,775,032 shares of QuikByte common stock and STI became a wholly owned subsidiary of QuikByte. The holders of QuikByte’s common stock immediately prior to the Merger held an aggregate of 2,228,333 shares of QuikByte’s common stock immediately following the Merger.

We were originally incorporated as San Diego Antibody Company in California in 2006 and were renamed “Sorrento Therapeutics, Inc.” and reincorporated in Delaware in 2009, prior to the Merger. QuikByte was originally incorporated in Colorado in 1989. Following the Merger, on December 4, 2009, QuikByte reincorporated under the laws of the State of Delaware (the “Reincorporation”). Immediately following the Reincorporation, on December 4, 2009, we merged with and into QuikByte, the separate corporate existence of STI ceased and QuikByte continued as the surviving corporation (the “Roll-Up Merger”). Pursuant to the certificate of merger filed in connection with the Roll-Up Merger, QuikByte’s name was changed from “QuikByte Software, Inc.” to “Sorrento Therapeutics, Inc.”

Address

Our principal executive offices are located at 9380 Judicial Drive, San Diego, CA 92121, and our telephone number at that address is (858) 210-3700. Our website is www.sorrentotherapeutics.com. Any information contained on, or that can be accessed through, our website is not incorporated by reference into, nor is it in any way part of this Form 10-K.

Available Information

We file electronically with the U.S. Securities and Exchange Commission (the "SEC") our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and reports filed pursuant to Section 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended. We make available on our website at www.sorrentotherapeutics.com, free of charge, copies of these reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Copies of our annual report to stockholders will also be made available, free of charge, upon written request.

The public may read and copy any materials filed by us with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at http://www.sec.gov. The contents of these websites are not incorporated into this filing. Further, our references to the URLs for these websites are intended to be inactive textual references only.

Item 1A. Risk Factors.

Risks Related to Our Financial Position and Capital Requirements

We are a clinical stage company subject to significant risks and uncertainties, including the risk that we or our partners may never develop, obtain regulatory approval or market any of our product candidates or generate product related revenues.

We are a clinical stage biotechnology company that began operating and commenced research and development activities in 2009. Pharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. There is no assurance that our libraries of fully-human mAbs or any of our other product candidates in development will be suitable for diagnostic or therapeutic use, or that we will be able to identify and isolate therapeutics product candidates, or develop, market and commercialize these candidates. We do not expect any of our product candidates in development, including, but not limited to, our fully-human mAbs, biosimilars/biobetters, fully human anti-PD-L1 and anti-PD-1 checkpoint inhibitors derived from our proprietary G-MAB™ library platform, antibody drug conjugates ("ADCs"), BsAbs, as well as CAR-T for adoptive cellular immunotherapy and RTX to be commercially available for a few years, if at all. Even if we are able to commercialize our product candidates, there is no assurance that these candidates would generate revenues or that any revenues generated would be sufficient for us to become profitable or thereafter maintain profitability.

We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales from most of our product candidates in the foreseeable future, if ever.

We have not generated any product related revenues to date, and, with the exception of our ZTlido™ lidocaine patch product, do not expect to generate any such revenues for at least the next several years, if at all. To obtain revenues from sales of our product candidates, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing and marketing products with commercial potential. We may never succeed in these activities, and we may not generate sufficient revenues to continue our business operations or achieve profitability.

We have incurred significant losses since inception and anticipate that we will incur continued losses for the foreseeable future.

As of December 31, 2016 and December 31, 2015, we had an accumulated deficit of $174.3 million and $113.3 million, respectively. We continue to incur significant research and development and other expenses related to our ongoing operations. We have incurred operating losses since our inception, expect to continue to incur significant operating losses for the foreseeable future, and we expect these losses to increase as we: (i) advance RTX and our other product candidates into clinical trials and pursue other development, acquire, develop and manufacture clinical trial materials and increase other regulatory operating activities, (ii) incur incremental expenses associated with our efforts to further advance a number of potential product candidates into preclinical development activities, (iii) continue to identify and advance a number of fully human therapeutic antibody and ADC preclinical product candidates, (iv) incur higher salary, lab supply and infrastructure costs incurred in connection with supporting all of our programs, (v) invest in our joint ventures, collaborations or other third party agreements, (vi) incur expenses in conjunction with defending and enforcing our rights in various litigation matters, and (vii) expand our corporate, development and manufacturing infrastructure. As such, we are subject to all risks incidental to the development of new biopharmaceutical products and related companion diagnostics, and we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may adversely affect our business. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We will require substantial additional funding, which may not be available to us on acceptable terms, or at all. If we fail to raise the necessary additional capital, we may be unable to complete the development and commercialization of

our product candidates, or continue our development programs.

Our operations have consumed substantial amounts of cash since inception. We expect to significantly increase our spending to advance the preclinical and clinical development of our product candidates and launch and commercialize any product candidates for which we receive regulatory approval, including building our own commercial organizations to address certain markets. We will require additional capital for the further development and commercialization of our product candidates, as well as to fund our other operating expenses and capital expenditures.

As a result of our recurring losses from operations and stockholders' capital deficiency, there is uncertainty regarding our ability to maintain liquidity sufficient to operate our business effectively, which raises substantial doubt about our ability to continue as a going concern. If we are unsuccessful in our efforts to raise outside financing, we may be required to significantly reduce or cease operations. The report of our independent registered public accounting firm on our audited financial statements for the year ended December 31, 2016 included a "going concern" explanatory paragraph indicating that our recurring losses from operations and availability of working capital raise substantial doubt about our ability to continue as a going concern.

We cannot be certain that additional funding will be available on acceptable terms, or at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us we may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our product candidates. We may also seek collaborators for one or more of our current or future product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available. Any of these events could significantly harm our business, financial condition and prospects.

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

- the progress of the development of our fully-human mAbs, including biosimilars/biobetters, fully human anti-PD-L1 and anti-PD-1 checkpoint inhibitors derived from our proprietary G-MAB™ library platform, ADCs, BsAbs, as well as CAR-T for adoptive cellular immunotherapy and RTX;
- the number of product candidates we pursue;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in filing and prosecuting patent applications and enforcing or defending patent claims;
- our plans to establish sales, marketing and/or manufacturing capabilities;
- the effect of competing technological and market developments;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- general market conditions for offerings from biopharmaceutical companies;
- our ability to establish, enforce and maintain selected strategic alliances and activities required for product commercialization; and
- our revenues, if any, from successful development and commercialization of our product candidates.

In order to carry out our business plan and implement our strategy, we anticipate that we will need to obtain additional financing from time to time and may choose to raise additional funds through strategic collaborations, licensing arrangements, joint ventures, public or private equity or debt financing, bank lines of credit, asset sales, government grants or other arrangements. We cannot be sure that any additional funding, if needed, will be available on terms favorable to us or at all. Furthermore, any additional equity or equity-related financing may be dilutive to our stockholders, and debt or equity financing, if available, may subject us to restrictive covenants and significant interest costs. If we obtain funding through a strategic collaboration or licensing arrangement, we may be required to relinquish our rights to certain of our product candidates or marketing territories.

Further, there is uncertainty related to future National Institutes of Health (“NIH”) grant funding, and the NIH’s plans for new grants or cooperative agreements may be re-scoped, delayed, or canceled depending on the nature of the work and the availability of resources. As a result, we cannot assure you that we will receive any additional funding under our existing NIH grants, and we may not be successful in securing additional grants from the NIH in the future.

Our inability to raise capital when needed would harm our business, financial condition and results of operations, and could cause our stock price to decline or require that we wind down our operations altogether.

Risks Related to Our Business and Industry

We are heavily dependent on the success of our technologies and product candidates, and we cannot give any assurance that any of our product candidates will receive regulatory approval, which is necessary before they can be commercialized.

To date, we have invested a significant portion of our efforts and financial resources in the acquisition and development of our product candidates. We have not demonstrated our ability to perform the functions necessary for the successful acquisition, development or commercialization of the technologies we are seeking to develop. As an early stage company, we have limited experience and have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields,

particularly in the biopharmaceutical area. Our future success is substantially dependent on our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize such product candidates. Our product candidates are currently in preclinical development or in clinical trials. Our business depends entirely on the successful development and commercialization of our product candidates, which may never occur. We currently generate no revenues from sales of any drugs, and we may never be able to develop or commercialize a marketable drug.

The successful development, and any commercialization, of our technologies and any product candidates would require us to successfully perform a variety of functions, including:

- developing our technology platform;
- seeking and obtaining intellectual property and/or proprietary rights to our technology and/or the technology of others;
- identifying, developing, manufacturing and commercializing product candidates;
- entering into successful licensing and other arrangements with product development partners;
    - participating in regulatory approval processes;
    - formulating and manufacturing products; and
- conducting sales and marketing activities.

Our operations have been limited to organizing our company, acquiring, developing and securing our proprietary technology and identifying and obtaining early preclinical data or clinical data for various product candidates. These operations provide a limited basis for you to assess our ability to continue to develop our technology, identify product candidates, develop and commercialize any product candidates we are able to identify and enter into successful collaborative arrangements with other companies, as well as for you to assess the advisability of investing in our securities. Each of these requirements will require substantial time, effort and financial resources.

Each of our product candidates will require additional preclinical or clinical development, management of preclinical, clinical and manufacturing activities, regulatory approval in multiple jurisdictions, obtaining manufacturing supply, building of a commercial organization, and significant marketing efforts before we generate any revenues from product sales. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the U.S. Food and Drug Administration (the “FDA”) or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates. In addition, our product development programs contemplate the development of companion diagnostics by our third-party collaborators. Companion diagnostics are subject to regulation as medical devices and must themselves be approved for marketing by the FDA or certain other foreign regulatory agencies before we may commercialize our product candidates.

Drug development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Clinical testing is expensive and can take many years to complete, and its outcome is risky and uncertain. Failure can occur at any time during the clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. It is not uncommon for companies in the pharmaceutical industry to suffer significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Our future clinical trial results may not be successful.

This drug candidate development risk is heightened by any changes in the planned clinical trials compared to the completed clinical trials. As product candidates are developed through preclinical to early and late stage clinical trials towards approval and commercialization, it is customary that various aspects of the development program, such as manufacturing and methods of administration, are altered along the way in an effort to optimize processes and results. While these types of changes are common and are intended to optimize the product candidates for late stage clinical trials, approval and commercialization, such changes do carry the risk that they will not achieve these intended objectives.

We have not previously initiated or completed a corporate-sponsored clinical trial. Consequently, we may not have the necessary capabilities, including adequate staffing, to successfully manage the execution and completion of any

clinical trials we initiate, including our planned clinical trials of ZTlido™, RTX, CAR-T, our biosimilar/biobetters antibodies and other product candidates, in a way that leads to our obtaining marketing approval for our product candidates in a timely manner, or at all.

In the event we are able to conduct a pivotal clinical trial of a product candidate, the results of such trial may not be adequate to support marketing approval. Because our product candidates are intended for use in life-threatening diseases, in some cases we ultimately intend to seek marketing approval for each product candidate based on the results of a single pivotal clinical trial. As a result, these trials may receive enhanced scrutiny from the FDA. For any such pivotal trial, if the FDA disagrees with our choice of primary endpoint or the results for the primary endpoint are not robust or significant relative to control, are subject to confounding factors, or are not adequately supported by other study endpoints, including possibly overall survival or complete response rate, the FDA may refuse to approve a New Drug Application ("NDA"), Biologics License Application ("BLA") or other application for

marketing based on such pivotal trial. The FDA may require additional clinical trials as a condition for approving our product candidates.

Delays in clinical testing could result in increased costs to us and delay our ability to generate revenue.

Although we are planning for certain clinical trials relating to RTX, CAR-T, and biosimilar/biobetter antibodies and other product candidates, there can be no assurance that the FDA will accept our proposed trial designs. We may experience delays in our clinical trials and we do not know whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. Clinical trials can be delayed for a variety of reasons, including delays related to:

- obtaining regulatory approval to commence a trial;
- reaching agreement on acceptable terms with prospective contract research organizations ("CROs") and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining institutional review board ("IRB") approval at each site;
- recruiting suitable patients to participate in a trial;
    - clinical sites deviating from trial protocol or dropping out of a trial;
- having patients complete a trial or return for post-treatment follow-up;
- developing and validating companion diagnostics on a timely basis, if required;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of product candidate for use in clinical trials.

Patient enrollment, a significant factor in the timing of clinical trials, 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 trial, the design of the clinical trial, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating. Furthermore, we intend to rely on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and we intend to have agreements governing their committed activities, we will have limited influence over their actual performance.

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by the Data Safety Monitoring Board for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, 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, the commercial prospects of our product candidates will 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 harm our business, financial condition and prospects significantly. 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.

Competition for patients in conducting clinical trials may prevent or delay product development and strain our limited financial resources.

Many pharmaceutical companies are conducting clinical trials in patients with the disease indications that our potential drug products target. As a result, we must compete with them for clinical sites, physicians and the limited number of patients who fulfill the stringent requirements for participation in clinical trials. Also, due to the confidential nature of clinical trials, we do not know how many of the eligible patients may be enrolled in competing studies and who are consequently not available to us for our clinical trials. Our clinical trials may be delayed or terminated due to the inability to enroll enough patients. Patient enrollment depends on many factors, including the size of the patient population, the nature of the trial protocol, the proximity of patients to clinical sites and the eligibility criteria for the study. The delay or inability to meet planned patient enrollment may result in increased costs and delays or termination of the trial, which could have a harmful effect on our ability to develop products.

The regulatory approval processes of the FDA, the EMA and comparable foreign authorities are lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.

The time required to obtain approval from the FDA, the European Medicines Agency ("EMA") and comparable foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not obtained regulatory approval for any product candidate and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain regulatory approval.

We may fail to receive regulatory approval for our product candidates for many reasons, including the following:

- the FDA, the EMA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA, the EMA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required for approval by the FDA, the EMA or comparable foreign regulatory authorities;
- the FDA, the EMA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA, a marketing authorization application ("MAA") or other submission or to obtain regulatory approval in the U.S., the European Union or elsewhere;
- the FDA, the EMA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies;
    - the FDA, the EMA or comparable foreign regulatory authorities may fail to approve the companion diagnostics we contemplate developing with partners; and
- the approval policies or regulations of the FDA, the EMA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations and prospects.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Other than a new drug application submitted by Scilex for Scilex's lead product candidate, ZTlido™, we have not previously submitted a BLA or an NDA to the FDA, an MAA to the EMA or similar drug approval filings to comparable foreign authorities, for any product candidate, and we cannot be certain that any of our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if our clinical trials are successful. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations. Even if we successfully obtain regulatory approvals to market one or more of our product candidates, our revenues will be dependent, in some instances, upon our collaborators' ability to obtain regulatory approval of the companion diagnostics to be used with our product candidates, as well as the size of the markets in the territories for which we gain regulatory approval and have

commercial rights. If the markets for patients that we are targeting for our product candidates are not as significant as we estimate, we may not generate significant revenues from sales of such products, if approved.

We plan to seek regulatory approval to commercialize our product candidates in the U.S., the European Union and in additional foreign countries. While the scope of regulatory approval is similar in other countries, to obtain separate regulatory approval in many other countries we must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of our product candidates, and we cannot predict success in these jurisdictions. Further, the United Kingdom has voted to withdraw from the European Union. We

cannot predict what consequences the withdrawal of the United Kingdom from the European Union might have on the regulatory frameworks of the United Kingdom or the European Union, or on our future operations, if any, in these jurisdictions.

Our approach to the discovery and development of product candidates that target ADCs or iTAbs is unproven, and we do not know whether we will be able to develop any products of commercial value.

ADCs and intracellular targeting antibodies ("iTAbs") are emerging technologies and, consequently, it is conceivable that such technologies may ultimately fail to identify commercially viable products to treat human patients with cancer or other diseases. Due to the unproven nature of ADCs and iTAbs, significant further research and development activities will be required. We may incur substantial costs in connection with such research and development activities and there is no guarantee that these activities will lead to the identification of commercially viable products.

Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial profile of an approved label, or result in significant negative consequences following marketing approval, if any.

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign authorities. Results of our trials could reveal a high and unacceptable severity and prevalence of these or other side effects. In such an event, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Additionally, if we receive marketing approval for one or more of our product candidates, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such products;
- regulatory authorities may require additional warnings on the label;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate or for particular indications of a product candidate, if approved, and could significantly harm our business, results of operations and prospects.

We rely on third parties to conduct our preclinical and clinical trials. If these third parties do not successfully perform their contractual legal and regulatory duties or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We have relied upon and plan to continue to rely upon third-party CROs to monitor and manage data for our ongoing preclinical and clinical programs. We rely on these parties for execution of our preclinical and clinical trials, and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with current good clinical practices ("cGCP"), which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area, and comparable foreign regulatory authorities for all of our

product candidates in clinical development.

Regulatory authorities enforce these cGCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, the EMA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications or may not approve our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with cGCP regulations. In addition, our clinical trials must be conducted with product produced under current good manufacturing practices ("cGMP") regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs or to do so on commercially reasonable terms. In addition, our CROs are not our employees, and except for remedies available to us under our agreements with such CROs, we cannot control whether or not they devote sufficient time and resources to our on-going clinical, nonclinical and preclinical programs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols, regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenues could be delayed.

Switching or adding additional CROs involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, there can be no assurance that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

If we fail to comply with manufacturing regulations, our financial results and financial condition will be adversely affected.

We currently manufacture our preclinical and clinical materials in-house. However, we only recently began manufacturing such materials and do not have significant prior experience manufacturing preclinical or clinical materials or product candidates. Before we can begin commercial manufacture of our product candidates, regulatory authorities must approve marketing applications that identify manufacturing facilities operated by us or our contract manufacturers that have passed regulatory inspection and manufacturing processes that are acceptable to the regulatory authorities. In addition, our pharmaceutical manufacturing facilities are continuously subject to scheduled and unannounced inspection by the FDA and international regulatory authorities, before and after product approval, to monitor and ensure compliance with cGMP and other regulations. Additionally, we may use contract manufacturers for the manufacture of our product candidates from time to time based on capacity needs. Although we are not involved in the day-to-day operations of our contract manufacturers, we are ultimately responsible for ensuring that our products are manufactured in accordance with cGMP regulations.

Due to the complexity of the processes used to manufacture our product candidates, we may be unable to continue to pass or initially pass federal or international regulatory inspections in a cost-effective manner. For the same reason, any potential third-party manufacturer of our product candidates may be unable to comply with cGMP regulations in a cost-effective manner and may be unable to initially or continue to pass a federal or international regulatory inspection.

If we, or third-party manufacturers with whom we contract, are unable to comply with manufacturing regulations, we may be subject to delay of approval of our product candidates, warning or untitled letters, fines, unanticipated compliance expenses, recall or seizure of our products, total or partial suspension of production and/or enforcement actions, including injunctions, and criminal or civil prosecution. These possible sanctions would adversely affect our financial results and financial condition.

Material necessary to manufacture our product candidates may not be available on commercially reasonable terms, or at all, which may delay the development and commercialization of our product candidates.

There are a limited number of suppliers for raw materials that we use to manufacture our drugs and there may be a need to assess alternate suppliers to prevent a possible disruption of the manufacture of the materials necessary to produce our product candidates for our clinical trials, and if approved, ultimately for commercial sale. We do not have any control over the process or timing of the acquisition of these raw materials by us. We typically do not have any

agreements for the commercial production of these raw materials. Any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to obtain or replace a third-party manufacturer could considerably delay completion of our clinical trials, product testing and potential regulatory approval of our product candidates. If we are unable to purchase these raw materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

We may not be able to manufacture our product candidates in commercial quantities, which would prevent us from commercializing our product candidates.

We are largely dependent on our third party manufacturers to conduct process development and scale-up work necessary to support greater clinical development and commercialization requirements for our product candidates. Carrying out these activities in a timely manner, and on commercially reasonable terms, is critical to the successful development and commercialization of our product candidates. We expect our third-party manufacturers are capable of providing sufficient quantities of our product candidates to meet anticipated clinical and full-scale commercial demands, however if third parties with whom we currently work are unable to meet our supply requirements, we will need to secure alternate suppliers. While we believe that there are other contract manufacturers with the

technical capabilities to manufacture our product candidates, we cannot be certain that identifying and establishing relationships with such sources would not result in significant delay or material additional costs.

The complexities and regulations related to our manufacturing and development services businesses subject us to potential risks.

Through certain subsidiaries, we offer development (e.g., conjugation) and manufacturing services that are highly complex, due in part to strict regulatory requirements. A failure of our quality control systems in our facilities could cause problems to arise in connection with facility operations for a variety of reasons, including equipment malfunction, contamination, failure to follow specific manufacturing instructions, protocols and standard operating procedures, problems with raw materials or environmental factors. Such problems could affect production of a single manufacturing run or a series of runs, requiring the destruction of products, or could halt manufacturing operations altogether. In addition, our failure to meet required quality standards may result in our failure to timely deliver products to our customers, which in turn could damage our reputation for quality and service. Any such incident could, among other things, lead to increased costs, lost revenue, reimbursement to customers for lost drug substance, damage to and possibly termination of existing customer relationships, time and expense spent investigating the cause and, depending on the cause, similar losses with respect to other manufacturing runs. With respect to our commercial manufacturing, if problems are not discovered before the product is released to the market, we may be subject to regulatory actions, including product recalls, product seizures, injunctions to halt manufacture and distribution, restrictions on our operations, civil sanctions, including monetary sanctions, and criminal actions. In addition, such issues could subject us to litigation and/or liability for damages, the cost of which could be significant.

Regulatory agencies may periodically inspect our manufacturing facilities to ensure compliance with applicable legal, regulatory and local requirements, such as cGMP requirements. Failure to comply with these requirements may subject us to possible legal or regulatory actions, such as suspension of manufacturing, seizure of product or voluntary recall of a product.

We currently have no sales and marketing organization. If we are unable to establish a direct sales force in the U.S. to promote our products, the commercial opportunity for our products may be diminished.

We currently have no sales and marketing organization. If any of our product candidates are approved by the FDA, we intend to market that product through our own sales force. We will incur significant additional expenses and commit significant additional management resources to establish our sales force. We may not be able to establish these capabilities despite these additional expenditures. We will also have to compete with other pharmaceutical and biotechnology companies to recruit, hire and train sales and marketing personnel. If we elect to rely on third parties to sell our product candidates in the U.S., we may receive less revenue than if we sold our products directly. In addition, although we would intend to use due diligence in monitoring their activities, we may have little or no control over the sales efforts of those third parties. In the event we are unable to develop our own sales force or collaborate with a third party to sell our product candidates, we may not be able to commercialize our product candidates which would negatively impact our ability to generate revenue.

We may need others to market and commercialize our product candidates in international markets.

In the future, if appropriate regulatory approvals are obtained, we may commercialize our product candidates in international markets. However, we have not decided how to commercialize our product candidates in those markets. We may decide to build our own sales force or sell our products through third parties. If we decide to sell our product candidates in international markets through a third party, we may not be able to enter into any marketing arrangements on favorable terms or at all. In addition, these arrangements could result in lower levels of income to us than if we marketed our product candidates entirely on our own. If we are unable to enter into a marketing arrangement for our product candidates in international markets, we may not be able to develop an effective international sales force to successfully commercialize those products in international markets. If we fail to enter into marketing arrangements for

our products and are unable to develop an effective international sales force, our ability to generate revenue would be limited.

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

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

that we conduct post-approval. The future discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

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

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

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 pharmaceutical product cannot be marketed in the U.S. or other countries until we have completed rigorous and extensive regulatory review processes, including 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 (the "PTO"). The FDA typically conducts a review of proposed product brand names, including an evaluation of potential for confusion with other product names. The FDA may also object to a product brand name if it believes the name 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.

Our failure to successfully discover, acquire, develop and market additional product candidates or approved products would impair our ability to grow.

As part of our growth strategy, we intend to develop and market additional products and product candidates. We are pursuing various therapeutic opportunities through our product pipeline. We may spend several years completing our development of any particular current or future internal product candidate, and failure can occur at any stage. The product candidates to which we allocate our resources may not end up being successful. In addition, because our internal research capabilities are limited, we may be dependent upon pharmaceutical and biotechnology companies, academic scientists and other researchers to sell or license products or technology to us. The success of this strategy depends partly upon our ability to identify, select, discover and acquire promising pharmaceutical product candidates and products. Failure of this strategy would impair our ability to grow.

The process of proposing, negotiating and implementing a license or acquisition of a product candidate or approved product is lengthy and complex. Other companies, including some with substantially greater financial, marketing and sales resources, may compete with us for the license or acquisition of product candidates and approved products. We have limited resources to identify and execute the acquisition or in-licensing of third-party products, businesses and technologies and integrate them into our current infrastructure. Moreover, we may devote resources to potential acquisitions or in-licensing opportunities that are never completed, or we may fail to realize the anticipated benefits of

such efforts. We may not be able to acquire the rights to additional product candidates on terms that we find acceptable, or at all.

In addition, future acquisitions may entail numerous operational and financial risks, including:

- disruption of our business and diversion of our management's time and attention to develop acquired products or technologies;
- incurrence of substantial debt, dilutive issuances of securities or depletion of cash to pay for acquisitions;
- higher than expected acquisition and integration costs;

- difficulty in combining the operations and personnel of any acquired businesses with our operations and personnel;
- increased amortization expenses;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership;
- impairment of our ability to obtain intellectual property rights or rights to commercialize additional product candidates, or increased cost to obtain such rights;
- inability to motivate key employees of any acquired businesses; and
- assumption of known and unknown liabilities.

Further, any product candidate that we acquire may require additional development efforts prior to commercial sale, including extensive clinical testing and approval by the FDA and applicable foreign regulatory authorities. All product candidates are prone to risks of failure typical of pharmaceutical product development, including the possibility that a product candidate will not be shown to be sufficiently safe and effective for approval by regulatory authorities.

Our commercial success depends upon us attaining significant market acceptance of our product candidates, if approved for sale, among physicians, patients, healthcare payors and major operators of cancer and other clinics.

Even if we obtain regulatory approval for our product candidates, the product may not gain market acceptance among physicians, health care payors, patients and the medical community, which are critical to commercial success. Market acceptance of any product candidate for which we receive approval depends on a number of factors, including:

- the efficacy and safety as demonstrated in clinical trials;
- the timing of market introduction of such product candidate as well as competitive products;
- the clinical indications for which the drug is approved;
- acceptance by physicians, major operators of cancer clinics and patients of the drug as a safe and effective treatment;
- the safety of such product candidate seen in a broader patient group, including its use outside the approved indications;
- the availability, cost and potential advantages of alternative treatments, including less expensive generic drugs;
- the availability of adequate reimbursement and pricing by third-party payors and government authorities;
- the product labeling or product insert required by the FDA or regulatory authority in other countries;
- the approval, availability, market acceptance and reimbursement for a companion diagnostic, if any;
- the prevalence and severity of adverse side effects; and
- the effectiveness of our sales and marketing efforts.

If any product candidate that we develop does not provide a treatment regimen that is as beneficial as, or is perceived as being as beneficial as, the current standard of care or otherwise does not provide patient benefit, that product candidate, if approved for commercial sale by the FDA or other regulatory authorities, likely will not achieve market acceptance. Our ability to effectively promote and sell any approved products will also depend on pricing and cost-effectiveness, including our ability to produce a product at a competitive price and our ability to obtain sufficient third-party coverage or reimbursement. If any product candidate is approved but does not achieve an adequate level of acceptance by physicians, patients and third-party payors, our ability to generate revenues from that product would be substantially reduced. In addition, our efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources, may be constrained by FDA rules and policies on product promotion, and may never be successful.

If we cannot compete successfully against other biotechnology and pharmaceutical companies, we may not be successful in developing and commercializing our technology and our business will suffer.

The biotechnology and pharmaceutical industries are characterized by intense competition and rapid technological advances, both in the U.S. and internationally. In addition, the competition in the oncology and pain management markets, and other relevant markets, is intense. Even if we are able to develop our product candidates, proprietary platform technology and/or additional antibody libraries, each will compete with a number of existing and future technologies and product candidates developed, manufactured and marketed by others. Specifically, we will compete

against fully integrated pharmaceutical companies and smaller companies that are

collaborating with larger pharmaceutical companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors have validated technologies with products already FDA-approved or in various stages of development. In addition, many of these competitors, either alone or together with their collaborative partners, operate larger research and development programs and have substantially greater financial resources than we do, as well as significantly greater experience in:

- developing product candidates and technologies generally;
- undertaking preclinical testing and clinical trials;
- obtaining FDA and other regulatory approvals of product candidates;
- formulating and manufacturing product candidates; and
- launching, marketing and selling product candidates.

Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff and experienced marketing and manufacturing organizations. Additional mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. As a result, these companies may obtain regulatory approval more rapidly than we are able and may be more effective in selling and marketing their products as well. Smaller or early-stage companies or generic or biosimilar pharmaceutical manufacturers may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing on an exclusive basis drug products that are more effective or less costly than any drug candidate that we are currently developing or that we may develop. If approved, our product candidates will face competition from commercially available drugs as well as drugs that are in the development pipelines of our competitors and later enter the market.

Established pharmaceutical companies may invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make our product candidates less competitive. In addition, any new product that competes with an approved product must demonstrate compelling advantages in efficacy, convenience, tolerability and safety in order to overcome price competition and to be commercially successful. Accordingly, our competitors may succeed in obtaining patent protection, receiving FDA, EMA or other regulatory approval or discovering, developing and commercializing medicines before we do, which would have a material adverse impact on our business. If our technologies fail to compete effectively against third party technologies, our business will be adversely impacted.

We expect that our ability to compete effectively will depend upon our ability to:

- successfully and efficiently complete clinical trials and submit for and obtain all requisite regulatory approvals in a cost-effective manner;
- obtain and maintain a proprietary position for our products and manufacturing processes and other related product technology;
- attract and retain key personnel;
- develop relationships with physicians prescribing these products; and
- build an adequate sales and marketing infrastructure for our product candidates.

Because we will be competing against significantly larger companies with established track records, we will have to demonstrate that, based on experience, clinical data, side-effect profiles and other factors, our product candidates, if approved, are competitive with other products.

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

There is significant uncertainty related to the third-party coverage and reimbursement of newly approved drugs. We intend to seek approval to market our product candidates in the U.S., Europe and other selected foreign jurisdictions.

Market acceptance and sales of our product candidates in both domestic and international markets will depend significantly on the availability of adequate coverage and reimbursement from third-party payors for any of our product candidates and may be affected by existing and future health care reform measures. Government and other third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for new drugs and, as a result, they may not cover or provide adequate payment for our product candidates. These payors may conclude that our product candidates are less safe, less effective or less cost-effective

than existing or future introduced products, and third-party payors may not approve our product candidates for coverage and reimbursement or may cease providing coverage and reimbursement for these product candidates.

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 to the payor supporting scientific, clinical and cost-effectiveness data for the use of our products. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. If reimbursement of our future products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, we may be unable to achieve or sustain profitability.

In some foreign countries, particularly in the European Union, 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 candidate. 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 product candidates to other available therapies. If reimbursement of our product candidates 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.

Healthcare reform measures could hinder or prevent our product candidates' commercial success.

In both the U.S. and certain foreign jurisdictions, there have been and we expect there will continue to be a number of legislative and regulatory changes to the health care system that could impact our ability to sell our products profitably. The U.S. government and other governments have shown significant interest in pursuing healthcare reform. In particular, the Medicare Modernization Act of 2003 revised the payment methodology for many products under the Medicare program in the U.S. This has resulted in lower rates of reimbursement. In 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the "Healthcare Reform Law"), was enacted. The Healthcare Reform Law substantially changed the way healthcare is financed by both governmental and private insurers. Such government-adopted reform measures may adversely impact the pricing of healthcare products and services in the U.S. or internationally and the amount of reimbursement available from governmental agencies or other third-party payors.

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. For example, there have been recent public announcements by members of the U.S. Congress, President Trump and his administration regarding their plans to repeal and replace the Healthcare Reform Law and Medicare. Although we cannot predict the ultimate content or timing of any healthcare reform legislation, potential changes resulting from any amendment, repeal or replacement of these programs, including any reduction in the future availability of healthcare insurance benefits, could adversely affect our business and future results of operations. 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 drug products for which we may obtain regulatory approval, as well as our ability to set satisfactory prices for our products, to generate revenues, and to achieve and maintain profitability.

Failure to successfully validate, develop and obtain regulatory approval for companion diagnostics could harm our long-term drug development strategy.

As one of the key elements of our clinical development strategy, we seek to identify patients within a disease category or indication who may derive selective and meaningful benefit from the product candidates we are developing. In collaboration with partners, we plan to develop companion diagnostics to help us to more accurately identify patients within a particular category or indication, both during our clinical trials and in connection with the commercialization of certain of our product candidates. Companion diagnostics are subject to regulation by the FDA and comparable foreign regulatory authorities as medical devices and require separate regulatory approval prior to commercialization.

We typically do not develop companion diagnostics internally and thus we are dependent on the sustained cooperation and effort of our third-party collaborators in developing and obtaining approval for these companion diagnostics. We and our collaborators may encounter difficulties in developing and obtaining approval for the companion diagnostics, including issues relating to selectivity/specificity, analytical validation, reproducibility or clinical validation. Any delay or failure by our collaborators to develop or obtain regulatory approval of the companion diagnostics could delay or prevent approval of our product candidates. In addition, our collaborators may encounter production difficulties that could constrain the supply of the companion diagnostics, and both they and we may have difficulties gaining acceptance of the use of the companion diagnostics in the clinical community. If such companion diagnostics fail to gain market acceptance, it would have an adverse effect on our ability to derive revenues from sales of our products. In addition, any diagnostic company with whom we contract may decide to discontinue selling or manufacturing the companion diagnostic that we anticipate using in connection with development and commercialization of our product candidates or our relationship with such diagnostic company may otherwise terminate. In such instances, we may not be able to enter into arrangements with another diagnostic company to obtain supplies of an alternative diagnostic test for use in

connection with the development and commercialization of our product candidates or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of our product candidates.

Our collaborations depend upon the efforts of third parties to fund and manage the development of many of our potential product candidates, and failure of those third party collaborators to assist or share in the costs of product development could materially harm our business, financial condition and results of operations.

Our strategy for the development and commercialization of our proprietary product candidates has included the formation of joint ventures and collaborative arrangements with third parties. Potential third parties include biopharmaceutical, pharmaceutical and biotechnology companies, academic institutions and other entities. Third-party collaborators may assist us in:

- funding research, preclinical development, clinical trials and manufacturing;
- seeking and obtaining regulatory approvals;
    - seeking and obtaining intellectual property and/or other proprietary rights to technology; and
- successfully commercializing any future product candidates.

Our collaborations limit our ability to control the efforts devoted to many of our product candidates in such arrangements and our earlier stage pipeline is dependent upon identifying new potential collaborators. For example, our most recent joint ventures require us to conduct research and provide potential product candidates in addition to making capital contributions to continue the further development of those products. We generally do not have control over the management of the joint ventures and are minority holders in most of those ventures, which may result in limitations on our ability to successfully develop product candidates, obtain intellectual property and/or other proprietary rights and fund clinical trials through those joint ventures.

In addition, if we are not able to establish further collaboration agreements, we may be required to undertake product development and commercialization at our own expense. Such an undertaking may limit the number of product candidates that we will be able to develop, significantly increase our capital requirements and place additional strain on our internal resources.

Our failure to enter into additional collaborations could materially harm our business, financial condition and results of operations.

In addition, our dependence on licensing, collaboration and other agreements with third parties may subject us to a number of risks. These agreements may not be on terms that prove favorable to us and may require us to relinquish certain rights in our product candidates. To the extent we agree to work exclusively with one collaborator in a given area, our opportunities to collaborate with other entities could be curtailed. Lengthy negotiations with potential new collaborators may lead to delays in the research, development or commercialization of product candidates. The decision by our collaborators to pursue alternative technologies or the failure of our collaborators to develop or commercialize successfully any product candidate to which they have obtained rights from us could materially harm our business, financial condition and results of operations.

Adverse economic conditions may have material adverse consequences on our business, results of operations and financial condition.

Unpredictable and unstable changes in economic conditions, including recession, inflation, increased government intervention, or other changes, may adversely affect our general business strategy. We rely upon our ability to generate additional sources of liquidity and we may need to raise additional funds through public or private debt or equity financings in order to fund existing operations or to take advantage of opportunities, including acquisitions of complementary businesses or technologies. Any adverse event would have a material adverse impact on our business,

results of operations and financial condition.

Because our development activities are expected to rely heavily on sensitive and personal information, an area which is highly regulated by privacy laws, we may not be able to generate, maintain or access essential patient samples or data to continue our research and development efforts in the future on reasonable terms and conditions, which may adversely affect our business.

Although we are not subject to the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), as we are neither a Covered Entity nor Business Associate (as defined in HIPAA and the Health Information Technology and Clinical Health Act (the "HITECH Act")), we may have access to very sensitive data regarding patients whose tissue samples are used in our studies. This data will contain information that is personal in nature. The maintenance of this data is subject to certain privacy-related laws, which impose upon us administrative and financial burdens, and litigation risks. For instance, the rules promulgated by the Department of Health and Human Services under HIPAA create national standards to protect patients' medical records and other personal information in the U.S. These rules require that healthcare providers and other covered entities obtain written authorizations from

patients prior to disclosing protected health care information of the patient to companies. If the patient fails to execute an authorization or the authorization fails to contain all required provisions, then we will not be allowed access to the patient's information and our research efforts can be substantially delayed. Furthermore, use of protected health information that is provided to us pursuant to a valid patient authorization is subject to the limits set forth in the authorization (i.e., for use in research and in submissions to regulatory authorities for product approvals). As such, we are required to implement policies, procedures and reasonable and appropriate security measures to protect individually identifiable health information we receive from covered entities, and to ensure such information is used only as authorized by the patient. Any violations of these rules by us could subject us to civil and criminal penalties and adverse publicity, and could harm our ability to initiate and complete clinical trials required to support regulatory applications for our product candidates. In addition, HIPAA does not replace federal, state, or other laws that may grant individuals even greater privacy protections. We can provide no assurance that future legislation will not prevent us from generating or maintaining personal data or that patients will consent to the use of their personal information, either of which may prevent us from undertaking or publishing essential research. These burdens or risks may prove too great for us to reasonably bear, and may adversely affect our ability to achieve profitability or maintain profitably in the future.

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

With the enactment of the Biologics Price Competition and Innovation Act of 2009 ("BPCIA") as part of the Health Care Reform Law, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The new abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable." The FDA defines an interchangeable biosimilar as a product that, in terms of safety or diminished efficacy, presents no greater risk when switching between the biosimilar and its reference product than the risk of using the reference product alone. Under the BPCIA, an application for a biosimilar product cannot be submitted to the FDA until four years, or approved by the FDA until 12 years, after the original brand product identified as the reference product was approved under a BLA. The new law is complex and is only beginning to be interpreted by the FDA. As a result, its ultimate impact, implementation and meaning are subject to uncertainty. While it is uncertain when any such processes may be fully adopted by the FDA, any such processes could have a material adverse effect on the future commercial prospects for our biological products.

We believe that if any of our product candidates were to be approved as biological products under a BLA, such approved products should qualify for the 12-year period of exclusivity. However, there is a risk that the U.S. Congress could amend the BPCIA to significantly shorten this exclusivity period, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing. In addition, a competitor could decide to forego the biosimilar route and submit a full BLA after completing its own preclinical studies and clinical trials. In such cases, any exclusivity to which we may be eligible under the BPCIA would not prevent the competitor from marketing its product as soon as it is approved.

The regulatory path forward for biosimilar/biobetter product candidates is not clear.

We have acquired and are assessing the regulatory and strategic path forward for our portfolio of late stage biosimilar/biobetter antibodies based on Erbitux®, Remicade®, Xolair® and Simulect®. While the enactment of the BPCIA created an abbreviated pathway for the approval of biosimilar and interchangeable biological products, there is still considerable uncertainty with respect to the FDA's approval process. While applications based on biosimilarity may not be required to duplicate the entirety of preclinical and clinical testing used to establish the underlying safety and effectiveness of the reference product, the FDA may refuse to approve an application if there is insufficient information to show that the active ingredients are the same or to demonstrate that any impurities or differences in

active ingredients do not affect the safety, purity or potency of the product. In addition, applications based on biosimilarity will not be approved unless the product is manufactured in facilities designed to assure and preserve the biological product's safety, purity and potency. Due to the uncertainty surrounding the approval of biosimilar/biobetter products, as well as other risk factors identified in this Form 10-K, our portfolio of late stage biosimilar/biobetter antibodies may never result in commercially viable products.

We may be exposed to liability claims associated with the use of hazardous materials and chemicals.

Our research and development activities may involve the controlled use of hazardous materials and chemicals. Although we believe that our safety procedures for using, storing, handling and disposing of these materials comply with federal, state and local laws and regulations, we cannot completely eliminate the risk of accidental injury or contamination from these materials. In the event of such an accident, we could be held liable for any resulting damages and any liability could materially adversely affect our business, financial condition and results of operations. We do not currently maintain hazardous materials insurance coverage. In addition, the federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of hazardous or radioactive materials and waste products may require us to incur substantial compliance costs that could materially harm our business.

If we are unable to retain and recruit qualified scientists and advisors, or if any of our key executives, key employees or key consultants discontinues his or her employment or consulting relationship with us, it may delay our development efforts or otherwise harm our business.

We may not be able to attract or retain qualified management and scientific and clinical personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses, particularly in the San Diego, California area. Our industry has experienced a high rate of turnover of management personnel in recent years. If we are not able to attract, retain and motivate necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the successful development of any product candidates, our ability to raise additional capital and our ability to implement our overall business strategy.

We are highly dependent on key members of our management and scientific staff, especially Henry Ji, Ph.D, Chief Executive Officer and President, George Ng, Executive Vice President and Chief Administrative Officer, Kevin Herde, Executive Vice President and Chief Financial Officer, Jeffrey Su, Executive Vice President and Chief Operating Officer, Jerry Zeldis, President of Clinical Research and Regulatory and Chief Medical Officer, and Miranda Toledano, Executive Vice President of Corporate Development. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel. The loss of any of our executive officers, key employees or key consultants and our inability to find suitable replacements could impede the achievement of our research and development objectives, potentially harm our business, financial condition and prospects. Furthermore, recruiting and retaining qualified scientific personnel to perform research and development work in the future is critical to our success. We may be unable to attract and retain personnel on acceptable terms given the competition among biotechnology, biopharmaceutical and health care companies, universities and non-profit research institutions for experienced scientists. Certain of our current officers, directors, scientific advisors and/or consultants or certain of the officers, directors, scientific advisors and/or consultants hereafter appointed may from time to time serve as officers, directors, scientific advisors and/or consultants of other biopharmaceutical or biotechnology companies. We do not maintain “key man” insurance policies on any of our officers or employees. All of our employees are employed “at will” and, therefore, each employee may leave our employment at any time.

We may not be able to attract or retain qualified management and scientific personnel in the future due to the intense competition for a limited number of qualified personnel among biopharmaceutical, biotechnology, pharmaceutical and other businesses. Many of the other pharmaceutical companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high quality candidates than what we have to offer. If we are unable to continue to attract and retain high quality personnel, the rate and success at which we can develop and commercialize product candidates will be limited.

We plan to grant stock options or other forms of equity awards in the future as a method of attracting and retaining employees, motivating performance and aligning the interests of employees with those of our stockholders. If we are unable to implement and maintain equity compensation arrangements that provide sufficient incentives, we may be unable to retain our existing employees and attract additional qualified candidates. If we are unable to retain our existing employees, including qualified scientific personnel, and attract additional qualified candidates, our business and results of operations could be adversely affected.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have a material adverse effect on our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we have established, comply with federal and state health-care fraud and abuse laws and

regulations, comply with laws and regulations (including, but not limited to the Foreign Corrupt Practices Act of 1977, as amended, 15 U.S.C. §§ 78dd-1 ("FCPA")) and internal policies restricting payments to government agencies and representatives, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. 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 this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the U.S., our operations may be directly, or indirectly through our customers, subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act. These laws may impact, among other things, our proposed sales, marketing and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payers that are false or fraudulent;
- HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the HITECH Act, and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payer, including commercial insurers, and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other 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 the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

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

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

- decreased demand for our product candidates or products that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls;
- costs to defend the related litigation;

- a diversion of management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;

- loss of revenues from product sales; and
- the inability to commercialize our product candidates.

Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of products we develop.

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

Our operations are subject to certain anti-corruption laws, including the FCPA, and other anti-corruption laws that apply in countries where we do business. The FCPA and other anti-corruption laws generally prohibit us and our employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. We and our commercial partners operate in a number of jurisdictions that pose a high risk of potential FCPA violations and we participate in collaborations and relationships with third parties whose actions could potentially subject us to liability under the FCPA or local anti-corruption laws. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted.

We are also subject to other laws and regulations governing our international operations, including regulations administered in the U.S. and in the EU, including applicable import and export control regulations such as those regulations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention (“CITES”), economic sanctions on countries and persons, customs requirements and currency exchange regulations (collectively, “Trade Control Laws”).

There can be no assurance that we will be completely effective in ensuring our compliance with all applicable anticorruption laws, including the FCPA or other legal requirements, such as Trade Control Laws. Any investigation of potential violations of the FCPA, other anti-corruption laws or Trade Control Laws by U.S., EU or other authorities could have an adverse impact on our reputation, our business, results of operations and financial condition. Furthermore, should we be found not to be in compliance with the FCPA, other anti-corruption laws or Trade Control Laws, we may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, as well as the accompanying legal expenses, any of which could have a material adverse effect on our reputation and liquidity, as well as on our business, results of operations and financial condition.

We will need to increase the size of our company and may not effectively manage our growth.

Our success will depend upon growing our business and our employee base. Over the next 12 months, we plan to add additional employees to assist us with research and development. Our future growth, if any, may cause a significant strain on our management, and our operational, financial and other resources. Our ability to manage our growth effectively will require us to implement and improve our operational, financial and management systems and to expand, train, manage and motivate our employees. These demands may require the hiring of additional management personnel and the development of additional expertise by management. Any increase in resources devoted to research and product development without a corresponding increase in our operational, financial and management systems could have a material adverse effect on our business, financial condition, and results of operations.

Any disruption in our research and development facilities could adversely affect our business, financial condition and results of operations.

Our principal executive offices, which house our research and development programs, are located in San Diego, California. Our facilities may be affected by natural or man-made disasters. Earthquakes are of particular significance

since our facilities are located in an earthquake-prone area. We are also vulnerable to damage from other types of disasters, including power loss, attacks from extremist organizations, fires, floods and similar events. In the event that our facilities were affected by a natural or man-made disaster, we may be forced to curtail our operations and/or rely on third-parties to perform some or all of our research and development activities. Although we believe we possess adequate insurance for damage to our property and the disruption of our business from casualties, such insurance may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all. In the future, we may choose to expand our operations in either our existing facilities or in new facilities. If we expand our worldwide manufacturing locations, there can be no assurance that this expansion will occur without implementation difficulties, or at all.

Our business and operations would suffer in the event of system failures.

Despite the implementation of security measures, our internal computer systems and those of our CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, cybersecurity attacks or hacking, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development of our product candidates could be delayed.

The terms of our secured debt facility require us to meet certain operating and financial covenants and place restrictions on our operating and financial flexibility. If we raise additional capital through debt financing, the terms of any new debt could further restrict our ability to operate our business.

On November 23, 2016, we and certain of our domestic subsidiaries (together with us, the “Borrowers”) entered into a Loan and Security Agreement , as amended (as so amended, the “Loan Agreement”) with Hercules Capital, Inc., as a lender and agent for several banks and other financial institutions or entities from time to time party to the Loan Agreement (collectively, the “Lenders”) for a term loan of up to $75.0 million, subject to funding in multiple tranches.

The Loan Agreement contains customary affirmative and restrictive covenants and representations and warranties, including financial reporting obligations and significant limitations on dividends, indebtedness, liens (including a negative pledge on intellectual property and other assets), collateral, investments, distributions, transfers, mergers or acquisitions, taxes, corporate changes, deposit accounts, and subsidiaries. Additionally, the Loan Agreement contains covenants requiring the Borrowers (i) to achieve certain fundraising requirements by certain dates and (ii) to maintain a minimum amount of unrestricted cash prior to achieving their corporate and fundraising milestones. The breach of such covenants, in addition to certain other covenants, would result in the occurrence of an event of default. Upon the occurrence of an event of default and following any applicable cure periods, a default interest rate of an additional 5.00% may be applied to the outstanding loan balances, and the Lenders may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement.

The affirmative covenants include, among others, covenants requiring us to maintain our legal existence and governmental approvals, deliver certain financial reports and maintain insurance coverage. The negative covenants include, among others, restrictions on transferring collateral, changing our business, incurring additional indebtedness, engaging in mergers or acquisitions, paying dividends or making other distributions, making investments and creating other liens on our assets, in each case subject to customary exceptions. If we default under the Loan Agreement, the Lenders may accelerate all of our repayment obligations and take control of our pledged assets, potentially requiring us to renegotiate our agreement on terms less favorable to us or to immediately cease operations. Further, if we are liquidated, the Lenders’ right to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. The Lenders could declare a default upon the occurrence of any event that they interpret as a material adverse change as defined under the Loan Agreement, thereby requiring us to repay the loan immediately or to attempt to reverse the declaration of default through negotiation or litigation. Any declaration by the Lenders of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline. If we raise any additional debt financing, the terms of such additional debt could further restrict our operating and financial flexibility.

Our operations in China subject us to risks and uncertainties relating to the laws and regulations of China.

Certain of our operations are currently based in China. Under its current leadership, the government of China has been pursuing economic reform policies, including by encouraging foreign trade and investment. However, there is no assurance that the Chinese government will continue to pursue such policies, that such policies will be successfully implemented, that such policies will not be significantly altered, or that such policies will be beneficial to our operations in China. China's system of laws can be unpredictable, especially with respect to foreign investment and foreign trade. The promulgation of new laws and regulations and changes to existing laws and regulations may adversely affect foreign investors and foreign entities with operations in China.

Additionally, the biopharmaceutical industry in particular in China is strictly regulated by the Chinese government. Changes to Chinese regulations affecting biopharmaceutical companies are unpredictable and may have a material adverse effect on our Chinese operations and on our business and financial condition.

Our global operations are exposed to political and economic risks, commercial volatility and events beyond our control in the countries in which we operate.

In addition to challenges specific to the United States, our operations, including but not limited to our operations outside of the United States, are subject to a variety of political and economic risks, including risks arising from:

- unexpected changes in international or domestic legal, regulatory or governmental requirements or regulations, including related to intellectual property or the biopharmaceutical industry;
- unexpected increases in taxes or tariffs;
- trade protection measures or import or export licensing requirements;
- divergent legal systems and regulatory frameworks; and
- political and economic instability or corruption.

These risks and others may have a material adverse effect on our global operations and on our business and financial condition.

Risks Related to Acquisitions

We have and plan to continue to acquire businesses and technologies and may fail to realize the anticipated benefits of the acquisitions, and acquisitions can be costly and dilutive.

We have and plan to continue to expand our business and intellectual property portfolio through the acquisition of new businesses and technologies. For example, we recently acquired approximately 72% of the outstanding capital stock of Scilex Pharmaceuticals Inc. and are in the process of integrating this company and its operations with ours. We have also announced binding term sheets to acquire Semnur Pharmaceuticals, Inc. and Virttu Biologics Limited. The success of any acquisitions depend on, among other things, our ability to combine our business with the acquired business in a manner that does not materially disrupt existing relationships and that allows us to achieve development and operational synergies. If we are unable to achieve these objectives, the anticipated benefits of the acquisition may not be realized fully or at all or may take longer to realize than expected. In particular, the acquisition may not be accretive to our stock value or development pipeline in the near or long term.

It is possible that the integration process could result in the loss of key employees; the disruption of our ongoing business or the ongoing business of the acquired companies; or inconsistencies in standards, controls, procedures or policies that could adversely affect our ability to maintain relationships with third parties and employees or to achieve the anticipated benefits of the acquisition. Integration efforts between us and the acquired company will also divert management's attention from our core business and other opportunities that could have been beneficial to our stockholders. An inability to realize the full extent of, or any of, the anticipated benefits of the acquisition, as well as any delays encountered in the integration process, could have an adverse effect on our business and results of operations, which may affect the value of the shares of our common stock after the completion of the acquisition. If we are unable to achieve these objectives, the anticipated benefits of the acquisition may not be realized fully or at all or may take longer to realize than expected. In particular, the acquisition may not be accretive to our stock value or development pipeline in the near or long term.

We expect to incur additional costs integrating the operations of any companies we acquire, higher development and regulatory costs, and personnel, which cannot be estimated accurately at this time. If the total costs of the integration of our companies and advancement of acquired product candidates and technologies exceed the anticipated benefits of the acquisition, our financial results could be adversely affected.

If we acquire companies or technologies in the future, they could prove difficult to integrate, disrupt our business, dilute stockholder value, and adversely affect our operating results and the value of our common stock.

As part of our business strategy, we may continue to acquire, enter into joint ventures with, or make investments in complementary or synergistic companies, services, and technologies in the future. Acquisitions and investments involve numerous risks, including:

- difficulties in identifying and acquiring products, technologies, proprietary rights or businesses that will help our business;
- difficulties in integrating operations, technologies, services, and personnel;
- diversion of financial and managerial resources from existing operations;
- the risk of entering new development activities and markets in which we have little to no experience;

- risks related to the assumption of known and unknown liabilities; and
- risks related to our ability to raise sufficient capital to fund additional operating activities.

As a result, if we fail to properly evaluate acquisitions or investments, we may not achieve the anticipated benefits of any such acquisitions, we may incur costs in excess of what we anticipate, and management resources and attention may be diverted from other necessary or valuable activities.

Any acquisitions we make could disrupt our business and seriously harm our financial condition.

We have in the past made (and may, from time to time, consider) acquisitions of complementary companies, products or technologies. Acquisitions involve numerous risks, including difficulties in the assimilation of the acquired businesses, the diversion of our management's attention from other business concerns and potential adverse effects on existing business relationships. In addition, any acquisitions could involve the incurrence of substantial additional indebtedness. We cannot assure you that we will be able to successfully integrate any acquisitions that we pursue or that such acquisitions will perform as planned or prove to be beneficial to our operations and cash flow. Any such failure could seriously harm our business, financial condition and results of operations.

Risks Related to Our Intellectual Property

Our ability to protect our intellectual property rights will be critically important to the success of our business, and we may not be able to protect these rights in the U.S. or abroad.

Our success, competitive position and future revenues will depend in part on our ability to obtain and maintain patent protection for our product candidates, methods, processes and other technologies, to prevent third parties from infringing on our proprietary rights, exclude others from using our technology and to operate without infringing upon the proprietary rights of third parties. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary rights are covered by valid and enforceable patents or are effectively maintained as trade secrets. We attempt to protect our proprietary position by maintaining trade secrets and by filing U.S. and foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development of our business. We have one issued U.S. patent covering our G-MAB™, which expires in 2022, and the examination of its European equivalent is currently in progress. In 2011, several improvement patent applications were filed for our proprietary antibody library technology. However, due to the difficulties of enforcing such antibody library technology, we filed a key patent application in the U.S. only and requested nonpublication. Subsequently, we filed multiple antibody family patent applications. The first of the antibody family patent applications was issued in 2014 and we continue to file additional patent applications for our product candidates and technology.

We have commenced generating a patent portfolio to protect each product candidate in our pipeline. However, the patent position of biopharmaceutical companies involves complex legal and factual questions, and therefore we cannot predict with certainty whether any patent applications that we have filed or that we may file in the future will be approved will cover our products or product candidates or that any resulting patents will be enforced. In addition, third parties may challenge, seek to invalidate, limit the scope of or circumvent any of our patents, once they are issued. Thus, any patents that we own or license from third parties or joint venture or development partners may not provide any protection against competitors. Any patent applications that we have filed or that we may file in the future, or those we may license from third parties or joint venture or development partners, may not result in patents being issued. Moreover, disputes between our licensing or joint development partners and us may arise over license scope, or ownership, assignment, inventorship and/or rights to use or commercialize patent or other proprietary rights, which may adversely impact our ability to obtain and protect our proprietary technology and products. Also, patent rights may not provide us with adequate proprietary protection or competitive advantages against competitors with similar technologies or products.

In addition, the laws of certain foreign countries do not protect our intellectual property rights to the same extent as do the laws of the U.S. If we fail to apply for intellectual property protection or if we cannot adequately protect our intellectual property rights in these foreign countries, our competitors may be able to compete more effectively against us, which could adversely affect our competitive position, as well as our business, financial condition and results of operations.

If any of our trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer.

Our success also depends upon the skills, knowledge and experience of our scientific and technical personnel and our consultants and advisors, as well as our licensors. To help protect our proprietary know-how and our inventions for which patents may be unobtainable or difficult to obtain, or prior to seeking patent protection, we rely on trade secret protection and confidentiality agreements. Unlike some of our competitors, in addition to certain manufacturing processes, we maintain our proprietary libraries for ourselves as trade secrets. To this end, we require all of our employees, consultants, advisors and contractors to enter into agreements

which prohibit the disclosure of confidential information and, where applicable, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business. These agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information. If any of our trade secrets, know-how or other proprietary information is disclosed, the value of our trade secrets, know-how and other proprietary rights would be significantly impaired and our business and competitive position would suffer. Moreover, our third party licensing partners may retain rights in some of our proprietary or joint trade secrets, know-how, patented inventions or other proprietary information, including rights to sublicense and rights of publication, which may adversely impact our ability to obtain patents and protect trade secrets, know-how or other proprietary information. In addition, the U.S. government may retain rights in some of our patents or other proprietary information.

Third party competitors may seek to challenge the validity of our patents, thereby rendering them unenforceable or we may seek to challenge third party competitor patents if such third parties seek to interpret or enforce a claim scope going well beyond the actual enabled invention.

Claims that we infringe upon the rights of third parties may give rise to costly and lengthy litigation, and we could be prevented from selling products, forced to pay damages, and defend against litigation.

Third parties may assert patent or other intellectual property infringement claims against us or our strategic partners or licensees with respect to our technologies and product candidates or potential product candidates. If our products, methods, processes and other technologies infringe upon the proprietary rights of other parties, we could incur substantial costs and we may have to:

- obtain licenses, which may not be available on commercially reasonable terms, if at all, and may be non-exclusive, thereby giving our competitors access to the same intellectual property licensed to us;
- redesign our products or processes to avoid infringement;
- stop using the subject matter validly claimed in the patents held by others;
- pay damages; and
- defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our valuable management resources.

Even if we were to prevail, any litigation could be costly and time-consuming and would divert the attention of our management and key personnel from our business operations. Furthermore, as a result of a patent infringement suit brought against us or our strategic partners or licensees, we or our strategic partners or licensees may be forced to stop or delay developing, manufacturing or selling technologies, product candidates or potential products that are claimed to infringe a third party's intellectual property unless that party grants us or our strategic partners' or licensees' rights to use its intellectual property. Ultimately, we may be unable to develop some of our technologies or potential products or may have to discontinue development of a product candidate or cease some of our business operations as a result of patent infringement claims, which could severely harm our business.

Our position as a relatively small company may cause us to be at a significant disadvantage in defending our intellectual property rights and in defending against infringement claims by third parties.

Litigation relating to the ownership and use of intellectual property is expensive, and our position as a relatively small company in an industry dominated by very large companies may cause us to be at a significant disadvantage in defending our intellectual property rights and in defending against claims that our technology infringes or misappropriates third party intellectual property rights. However, we may seek to use various post-grant administrative proceedings, including new procedures created under the America Invents Act, to invalidate potentially overly-broad third party rights. Even if we are able to defend our position, the cost of doing so may adversely affect our ability to grow, generate revenue or become profitable. We were recently named as a defendant in the U.S. District Court for the District of New Jersey in a suit brought by Immunomedics, Inc. ("Immunomedics") alleging,

among other things, patent infringement, improper use and sharing of research material, and breach of contract for failure to provide Immunomedics with the right of first refusal to an exclusive license to certain technologies. This case was dismissed against us for lack of personal jurisdiction but may still pose a risk to our intellectual property and/or licensing rights in certain technologies. In the course of the ongoing litigation or any future additional litigation to which we may be subject, we may not be able to protect our intellectual property at a reasonable cost, or at all. The outcome of litigation is always uncertain, and in some cases could include judgments against us that require us to pay damages, enjoin us from certain activities or otherwise affect our legal, contractual or intellectual property rights, which could have a significant adverse effect on our business.

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

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including PTO administrative proceedings, such as inter partes reviews, and reexamination proceedings before the PTO or oppositions and revocations and other comparable proceedings in foreign jurisdictions. 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 product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others.

Despite safe harbor provisions, third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents, of which we are currently unaware, with claims to materials, formulations, methods of doing research or library screening, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent published applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtain a license under the applicable patents, or until such patents expire or they are finally determined to be held invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the applicable product candidate unless we obtain a license, limit our uses, or until such patent expires or is finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, cease marketing our products or developing our product candidates, limit our uses, pay royalties or redesign our infringing product candidates, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize one or more of our product candidates, which could harm our business significantly.

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

Filing, prosecuting and defending patents on all of our product candidates throughout the world would be prohibitively expensive. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the U.S. These products may compete with our products in jurisdictions where we do not have any issued patents and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from so competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in 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 biopharmaceuticals, 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 cost and divert our efforts and attention from other aspects of our business.

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 of biologics and small molecule drugs, 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 U.S. 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.

If we breach any of the agreements under which we license commercialization rights to our product candidates from third parties, we could lose license rights that are important to our business.

We license the use, development and commercialization rights for all of our product candidates, and may enter into similar licenses in the future. Under each of our existing license agreements we are subject to commercialization and development, diligence obligations, milestone payment obligations, royalty payments and other obligations. If we fail to comply with any of these obligations or otherwise breach our license agreements, our licensing partners may have the right to terminate the license in whole or in part.

For example, certain of our joint development and/or licensing agreements, including but not limited to our agreement with City of Hope, set forth diligence milestones including timelines in which certain clinical trials should be initiated. Due to the uncertainty of drug development and clinical trials as set forth above, we may not be able to meet these diligence milestones, which could result in loss of exclusivity or loss of our rights to develop certain products or services pursuant to those agreements.

Generally, the loss of any one of our current licenses or other licenses in the future could materially harm our business, prospects, financial condition and results of operations.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

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

- Others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed;
- We or our licensors or strategic partners might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed;
- We or our licensors or strategic partners might not have been the first to file patent applications covering certain of our inventions;
- Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- Our pending patent applications may not lead to issued patents;
- Issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- Our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- We may not develop additional proprietary technologies that are patentable; and
- The patents of others may have an adverse effect on our business.

Should any of these events occur, they could significantly harm our business, results of operations and prospects.

From time to time we may need to license patents, intellectual property and proprietary technologies from third parties, which may be difficult or expensive to obtain.

We may need to obtain licenses to patents and other proprietary rights held by third parties to successfully develop, manufacture and market our drug products. As an example, it may be necessary to use a third party's proprietary technology to reformulate one of our drug products in order to improve upon the capabilities of the drug product. If we are unable to timely obtain these licenses on reasonable terms, our ability to commercially exploit our drug products may be inhibited or prevented.

We remain responsible for payments of all milestone and license fees to Samyang Biopharmaceuticals Corporation pursuant to our agreement with NantPharma.

As a result of our acquisition of IgDraSol, Inc. in September 2013, we became a party to an Exclusive Distribution Agreement, as amended, with Samyang Biopharmaceuticals Corporation ("Samyang") in connection with our development of Cynviloq™ which contained various milestone and license fees to be paid to Samyang. On May 14, 2015, we sold all of our equity interests in IgDrasol, Inc. to NantPharma, LLC ("NantPharma"). As part of the sale, we agreed with NantPharma to be responsible for and pay all milestone and license fees required to be paid to Samyang under the Exclusive Distribution Agreement following notification from NantPharma when such milestone and license fees become due and payable. If such milestone or licenses fees become due and payable, the payment thereof could materially harm our business and financial condition.

Risks Related to Ownership of Our Common Stock

The market price of our common stock may fluctuate significantly, and investors in our common stock may lose all or a part of their investment.

The market prices for securities of biotechnology and pharmaceutical companies have historically been highly volatile, and the market has from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. For example, from January 4, 2016 to December 30, 2016, our closing stock price ranged from $4.50 to $8.18 per share. The market price of our common stock may fluctuate significantly in response to numerous factors, some of which are beyond our control, such as:

- actual or anticipated adverse results or delays in our clinical trials;
- our failure to commercialize our product candidates, if approved;
- unanticipated serious safety concerns related to the use of any of our product candidates;
- adverse regulatory decisions;
- changes in laws or regulations applicable to our product candidates, including but not limited to clinical trial requirements for approvals;
- legal disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our product candidates, government investigations and the results of any proceedings or lawsuits, including, but not limited to, patent or stockholder litigation;
- our decision to initiate a clinical trial, not initiate a clinical trial or to terminate an existing clinical trial;
- our dependence on third parties, including CROs;
- announcements of the introduction of new products by our competitors;
- market conditions in the pharmaceutical and biotechnology sectors;
- announcements concerning product development results or intellectual property rights of others;
- future issuances of common stock or other securities;
- the addition or departure of key personnel;
- failure to meet or exceed any financial guidance or expectations regarding development milestones that we may provide to the public;
- actual or anticipated variations in quarterly operating results;
- our failure to meet or exceed the estimates and projections of the investment community;
- overall performance of the equity markets and other factors that may be unrelated to our operating performance or the operating performance of our competitors, including changes in market valuations of similar companies;
- conditions or trends in the biotechnology and biopharmaceutical industries;
- introduction of new products offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- issuances of debt or equity securities;

42

- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- ineffectiveness of our internal controls;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- failure to effectively integrate the acquired companies' operations;
- general political and economic conditions;
- effects of natural or man-made catastrophic events; and
- other events or factors, many of which are beyond our control.

Further, the equity markets in general have recently experienced extreme price and volume fluctuations. Continued market fluctuations could result in extreme volatility in the price of our common stock, which could cause a decline in the value of our common stock. Price volatility of our common stock might worsen if the trading volume of our common stock is low. The realization of any of the above risks or any of a broad range of other risks, including those described in these "Risk Factors," could have a dramatic and material adverse impact on the market price of our common stock.

We have not paid cash dividends in the past and do not expect to pay cash dividends in the foreseeable 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 on our common stock in the foreseeable future. The payment of dividends on our capital stock will depend on our earnings, financial condition and other business and economic factors affecting us at such time as the board of directors may consider relevant. Pursuant to our Loan Agreement, we are prohibited from paying any dividends without the prior written consent of the Lenders. If we do not pay dividends, our common stock may be less valuable because a return on your investment will only occur if the common stock price appreciates.

Our strategic investments may result in losses.

We periodically make strategic investments in various public and private companies with businesses or technologies that may complement our business. The market values of these strategic investments may fluctuate due to market conditions and other conditions over which we have no control. Other-than-temporary declines in the market price and valuations of the securities that we hold in other companies would require us to record losses related to our investment. This could result in future charges to our earnings. It is uncertain whether or not we will realize any long-term benefits associated with these strategic investments.

A sale of a substantial number of shares of the common stock may cause the price of our common stock to decline.

If our stockholders sell, or the market perceives that our stockholders intend to sell for various reasons, substantial amounts of our common stock in the public market, including shares issued in connection with the exercise of outstanding options or warrants, the market price of our common stock could fall. Sales of a substantial number of shares of our common stock may make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate. We may become involved in securities class action litigation that could divert management's attention and harm our business.

The stock markets have from time to time experienced significant price and volume fluctuations that have affected the market prices for the common stock of biotechnology and biopharmaceutical companies. These broad market fluctuations may cause the market price of our common stock to decline. In the past, securities class action litigation has often been brought against a company following a decline in the market price of our securities. This risk is especially relevant for us because biotechnology and biopharmaceutical companies have experienced significant stock price volatility in recent years. We may become involved in this type of litigation in the future. Litigation often is expensive and diverts management's attention and resources, which could adversely affect our business.

43

Our quarterly operating results may fluctuate significantly.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of expenses related to our development programs;
- the addition or termination of clinical trials;
- any intellectual property infringement lawsuit in which we may become involved;
- regulatory developments affecting our product candidates; and
- our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our common stock to fluctuate substantially.

Existing stockholders' interest in us may be diluted by additional issuances of equity securities and raising funds through acquisitions, lending and licensing arrangements may restrict our operations or require us to relinquish proprietary rights.

We may issue additional equity securities to fund future expansion and pursuant to equity incentive or employee benefit plans. We may also issue additional equity for other purposes. These securities may have the same rights as our common stock or, alternatively, may have dividend, liquidation or other preferences to our common stock. The issuance of additional equity securities will dilute the holdings of existing stockholders and may reduce the share price of our common stock.

If we raise additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish potentially valuable rights to our product candidates, potential products or proprietary technologies, or grant licenses on terms that may not be favorable to us. If adequate funds are not available, our ability to achieve profitability or to respond to competitive pressures would be significantly limited and we may be required to delay, significantly curtail or eliminate the development of our product candidates.

Directors, executive officers, principal stockholders and affiliated entities own a significant percentage of our capital stock, and they may make decisions that you do not consider to be in your best interests or those of our other stockholders.

As of December 31, 2016, our directors and executive officers beneficially owned, in the aggregate, approximately 6% of our outstanding voting securities. As a result, if some or all of them acted together, they would have the ability to exert significant influence over the election of our board of directors and the outcome of issues requiring approval by our stockholders. This concentration of ownership may also have the effect of delaying or preventing a change in control of our company that may be favored by other stockholders. This could prevent transactions in which stockholders might otherwise recover a premium for their shares over current market prices.

Our ability to use our net operating loss carry forwards may be subject to limitation.

Generally, a change of more than 50% in the ownership of a company's stock, by value, over a three-year period constitutes an ownership change for U.S. federal income tax purposes. An ownership change may limit our ability to use our net operating loss carryforwards attributable to the period prior to the change. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income may become subject to limitations, which could potentially result in increased future tax liability for us.

Our certificate of incorporation, as amended, and bylaws provide for indemnification of officers and directors at our expense and limits their liability, which may result in a major cost to us and hurt the interests of our stockholders because corporate resources may be expended for the benefit of our officers and/or directors.

Our certificate of incorporation, as amended, bylaws and applicable Delaware law provide for the indemnification of our directors, officers, employees, and agents, under certain circumstances, against attorney's fees and other expenses incurred by them in any litigation to which they become a party arising from their association with or activities on our behalf. We will also bear the expenses of such litigation for any of our directors, officers, employees, or agents, upon such person's promise to repay us, therefore if it is ultimately determined that any such person shall not have been entitled to indemnification. This indemnification policy could result in substantial expenditures by us, which we will be unable to recover.

Our corporate documents and Delaware law contain provisions that could discourage, delay or prevent a change in control of our company, prevent attempts to replace or remove current management and reduce the market price of our common stock.

Provisions in our certificate of incorporation, as amended, and bylaws may discourage, delay or prevent a merger or acquisition involving us that our stockholders may consider favorable. For example, our certificate of incorporation, as amended, authorizes our board of directors to issue up to 100,000,000 shares of "blank check" preferred stock. As a result, without further stockholder approval, the board of directors has the authority to attach special rights, including voting and dividend rights, to this preferred stock. With these rights, preferred stockholders could make it more difficult for a third party to acquire us.

We are also subject to the anti-takeover provisions of the General Corporation Law of the State of Delaware. Under these provisions, if anyone becomes an "interested stockholder," we may not enter into a "business combination" with that person for three years without special approval, which could discourage a third party from making a takeover offer and could delay or prevent a change in control of us. An "interested stockholder" means, generally, someone owning 15% or more of our outstanding voting stock or an affiliate of ours that owned 15% or more of our outstanding voting stock within the past three years, subject to certain exceptions as described in the General Corporation Law of the State of Delaware.

We have adopted a shareholder rights plan, the purpose of which is, among other things, to enhance our board of directors' ability to protect shareholder interests and to ensure that stockholders receive fair treatment in the event any coercive takeover attempt of our company is made in the future. The shareholder rights plan could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, our company or a large block of our common stock.

Compliance with changing regulations concerning corporate governance and public disclosure may result in additional expenses.

There have been changing laws, regulations and standards relating to corporate governance and public disclosure, including the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley"), new regulations promulgated by the U.S. Securities and Exchange Commission (the "SEC") and rules promulgated by the national securities exchanges. The Dodd-Frank Act, enacted in July 2010, expanded federal regulation of corporate governance matters and imposes requirements on public companies to, among other things, provides stockholders with a periodic advisory vote on executive compensation and also adds compensation committee reforms and enhanced pay-for-performance disclosures. While some provisions of the Dodd-Frank Act were effective upon enactment, others have been and will be implemented upon the SEC's adoption of related rules and regulations. The scope and timing of the adoption of such rules and regulations is uncertain and, accordingly, the cost of compliance with the Dodd-Frank Act is also uncertain. Additionally, while campaigning, President Trump made statements suggesting he may seek to adopt legislation that could significantly affect the regulation of United States financial markets. Areas subject to potential change, amendment or repeal include the Dodd-Frank Act, including § 619 (12 U.S.C. § 1851) known as the Volcker Rule and various swaps and derivatives regulations, the authority of the Federal Reserve and the Financial Stability Oversight Council, and renewed proposals to separate banks' commercial and investment banking activities.

These new or changed laws, regulations and standards are, or will be, subject to varying interpretations in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies, which could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. As a result, our efforts to comply with evolving laws, regulations and standards are likely to continue to result in increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities. Members of our board of directors and our principal executive officer and principal financial

officer could face an increased risk of personal liability in connection with the performance of their duties. As a result, we may have difficulty attracting and retaining qualified directors and executive officers, which could harm our business. If the actions we take in our efforts to comply with new or changed laws, regulations and standards differ from the actions intended by regulatory or governing bodies, we could be subject to liability under applicable laws or our reputation may be harmed.

We have identified a material weakness in our internal control over financial reporting, and our financial controls and procedures may not in the future be sufficient to ensure timely and reliable reporting of financial information, which could materially harm our stock price and exchange listing, could cause our stock price to decline significantly and could make it more difficult for us to raise capital.

Sarbanes-Oxley specifically requires, among other things, that we maintain effective internal controls for financial reporting and disclosure of controls and procedures. In particular, we must perform system and process evaluation and testing of our internal controls over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting, as required by Section 404 of Sarbanes-Oxley. In March 2017, in connection with the preparation of our 2016 financial statements, we identified certain purchase agreements which contained terms for contingent consideration that were not identified timely and accounted for in our historical financial statements on a timely basis. Further, certain other purchase agreements containing terms for contingent consideration were identified timely, but we failed to adjust the liabilities for changes in fair value at each subsequent

reporting period. Accordingly, we did not appropriately account for liabilities for contingent consideration payable and the related adjustments to earnings. . Based on these findings, our management identified a material weakness in our review controls over unusual or non-recurring and significant transactions. Specifically, our controls were not properly designed to provide reasonable assurance that we (1) timely identify and assess the accounting implications of terms in unusual or non-recurring agreements and (2) reassess the valuation of associated assets or liabilities at the end of each reporting period. We have initiated and will continue to implement remediation measures to address the underlying causes of the material weakness described above and to improve and strengthen our internal control over financial reporting. We cannot assure you that the measures we have taken to date or any measures we may take in response to the material weakness in the future will be sufficient to remediate such material weakness or to avoid potential future material weaknesses. Even if we develop effective controls, these new controls may become inadequate because of changes in conditions or the degree of compliance with these policies or procedures may deteriorate.

Our compliance with Section 404 of Sarbanes-Oxley requires that we incur substantial accounting expense and expend significant management efforts. We currently do not have an internal audit group, and we will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. Moreover, if we are not able to comply with the requirements of Section 404 of Sarbanes-Oxley in a timely manner, if we fail to remediate the material weaknesses in internal control over financial reporting or if we or our independent registered public accounting firm identifies additional deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline, and we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.

Item 1B. Unresolved Staff Comments.
None.

Item 2. Properties.
We currently lease in San Diego, California approximately 43,000 square feet of corporate office and laboratory space, approximately 6,350 square feet of laboratory and office space at a second location and approximately 1,405 square feet of office space at a third location. We also previously leased approximately 1,800 square feet of office space in Cary, North Carolina, under a lease which expired in March 2016 and was not renewed. Our lease agreements for the lease of space in San Diego, as amended, for our corporate office and laboratory space, for our second laboratory and office space and for our third office space expire in December 2026, November 2025 and September 2020, respectively. The Company also leases 25,381 square feet of office and laboratory space in Suzhou, China, which lease expires in June 2018.

Additionally, we expect to enter into a new lease in San Diego, California for approximately 76,700 square feet of additional corporate office and laboratory space as well as approximately 36,400 square feet for offices, facilities for cGMP fill and finish, and storage space at a new location beginning in 2017.

Item 3. Legal Proceedings.
To the best of our knowledge, we (the “Company”) are not a party to any legal proceedings that, individually or in the aggregate, are deemed to be material to our financial condition or results of operations.

In the normal course of business, we may be named as a defendant in one or more lawsuits. We are not a party to any outstanding material litigation and management is currently not aware of any legal proceedings that, individually or in the aggregate, are deemed to be material to our financial condition or results of operations.

Derivative Action Litigation

On April 25, 2016, Wildcat Liquid Alpha, LLC ("WLA") filed a complaint in the Court of Chancery of the State of Delaware seeking an order compelling the Company to provide WLA with certain documents, books and records for inspection and copying pursuant to an April 11, 2016 demand made by WLA (the "Inspection Demand Action"). On May 13, 2016, WLA filed a derivative action in the Court of Chancery of the State of Delaware (the "WLA Action" and, together with the Inspection Demand Action, the "Actions") against each of the members of the Company's board of directors at the time, Henry Ji, William S. Marth, Kim D. Janda, Jaisim Shah, David H. Deming, and Douglas Ebersole (the "Prior Board") and against the Company as nominal defendant. After the members of the Prior Board and the Company moved to dismiss, on August 12, 2016, WLA filed an amended complaint containing both direct and derivative claims against each of the members of the Prior Board and against the Company as nominal defendant, alleging, among other things: (1) breach of fiduciary duty with respect to the formation of, and certain options and warrants issued by, certain of the Company's subsidiaries to Dr. Ji and members of the Prior Board (the "Subsidiary Options Claim"); (2) breach of fiduciary duty with respect to the Company's prior announcement that it had entered into a voting agreement with Yuhan Corporation

("Yuhan") in connection with a transaction through which it purchased $10 million of shares of our common stock and warrants (the "Yuhan Agreement Claim") ; (3) waste of corporate assets regarding the foregoing; (4) unjust enrichment regarding the foregoing; and (5) violation of 8 Del. C. § 160 based on the Yuhan voting agreement. On March 17, 2017, the Company, the members of the Prior Board and WLA entered into a confidential settlement agreement and release (the "Settlement Agreement") pursuant to which, among other things, each party agreed to forever release and not to sue the other party with respect to the claims asserted in the Actions and WLA agreed to dismiss the Actions within ten business days following the execution of the Settlement Agreement. The Company also agreed (1) to terminate all options and warrants currently outstanding in Company subsidiaries that have been granted to Dr. Ji and any other director of the Company, (2) to grant WLA the right to designate a representative to attend all meetings of the Company's board of directors in a nonvoting observer capacity, and (3) to act in good faith to attempt to add two additional independent directors to the Company's board of directors. In addition, WLA agreed to comply with a two-year standstill period, during which WLA is prohibited from engaging in certain actions relating to controlling or influencing the management of the Company.

On September 8, 2016, Yvonne Williams filed an action both derivatively and on behalf of a purported class of stockholders in the Court of Chancery of the State of Delaware against each of the members of the Prior Board; George Ng, the Company's Executive Vice President, Chief Administrative Officer, and Chief Legal Officer; Jeffrey Su, the Company's Executive Vice President & Chief Operating Officer; and the Company as nominal defendant, alleging: (1) breach of fiduciary duty with respect to the Subsidiary Options Claim; and (2) breach of fiduciary duty with respect to the Yuhan Agreement Claim (the "Williams Action").

Immunomedics Litigation

On June 26, 2015, Immunomedics, Inc. ("Immunomedics") filed a complaint in the United States District Court for the District of New Jersey (the "Immunomedics Action") against the Board of Directors of Roger Williams Medical Center, Dr. Richard P. Junghans, Dr. Steven C. Katz, the Office of the Board of Advisors of Tufts University School of Medicine, and one or more individuals or entities to be identified later. This complaint (the "Initial Complaint") alleged, among other things: (1) breach of contract; (2) breach of covenant of good faith and fair dealing; (3) tortious interference with prospective economic gain; (4) tortious interference with contracts; (5) misappropriation; (6) conversion; (7) bailment; (8) negligence; (9) vicarious liability; and (10) patent infringement. Overall, the allegations in the Initial Complaint were generally directed to an alleged material transfer agreement dated December 2008 and Immunomedics' alleged request for the return of certain alleged research material, as well as the alleged improper use and conversion of such research materials outside the scope of the material transfer agreement.

On October 22, 2015, Immunomedics filed an amended complaint (the "First Amended Complaint"), which, among other things, no longer named the Board of Directors of Roger Williams Medical Center and The Office of the Board of Advisors of Tufts University School of Medicine as defendants. Roger Williams Medical Center and Tufts Medical Center were added as new defendants. On January 14, 2016, Immunomedics filed a second amended complaint (the "Second Amended Complaint"), which, among other things, no longer named Tufts Medical Center as a defendant. In addition, the Second Amended Complaint contained allegations directed to two additional alleged material transfer agreements dated September 1993 and May 2010, respectively, and also added an allegation of unjust enrichment. The Second Amended Complaint also no longer asserted claims for (1) breach of covenant of good faith and fair dealing; (2) misappropriation; (3) bailment; (4) negligence; and (5) vicarious liability.

On October 12, 2016, Immunomedics filed a third amended complaint (the "Third Amended Complaint"), which added the Company, TNK Therapeutics, Inc. ("TNK"), BDL Products, Inc. ("BDL"), and CARgenix Holdings LLC ("CARgenix") as defendants. TNK is a subsidiary of the Company and purchased BDL and CARgenix in August 2015. The Third Amended Complaint includes, among other things, allegations against the Company, TNK, BDL and CARgenix regarding (1) conversion; (2) tortious interference; and (3) unjust enrichment. On December 2, 2016, the Company, TNK, BDL, and CARgenix filed a motion to dismiss Immunomedics's complaint against them for lack of personal jurisdiction. On January 25, 2017, the District of New Jersey granted this motion, and the Company, TNK, BDL and

CARgenix were dismissed as defendants from the case. The Immunomedics Action remains pending in the District of New Jersey against defendants Roger Williams Medical Center, Dr. Junghans, and Dr. Katz. A trial date has not yet been set. The Company believes that the Immunomedics Action is without merit, and will vigorously defend itself against this and any further actions. However, should Immunomedics prevail against the Company, Roger Williams Medical Center or other defendants, certain patent rights optioned, owned and/or licensed by the Company could be at risk of invalidity or enforceability, or the litigation could otherwise adversely impact the Company's ownership or other rights in certain intellectual property. At this point in time, the Company is unable to determine whether any loss will occur with respect to the Immunomedics Action or to estimate the range of such potential loss; therefore, no amount of loss has been accrued by the Company as of the date of filing of this Form 10-K.

Item 4. Mine Safety Disclosures.
None.

PART II

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

Market Information

Our common stock is listed on The NASDAQ Capital Market under the symbol "SRNE".

The following table sets forth the range of high and low sale prices for our common stock for the periods indicated in 2016 and 2015 as reported by NASDAQ.

	2016		2015	
First Quarter	$8.52	$4.25	$14.30	$8.27
Second Quarter	7.80	5.26	17.83	8.15
Third Quarter	8.00	5.55	26.80	7.64
Fourth Quarter	8.35	4.68	10.71	7.18

Holders of Record

As of March 9, 2017, there were 250 holders of record of our common stock.

Dividend Policy

We have not declared or paid any cash dividends on our common stock and we do not anticipate paying any dividends or making any other distributions in the foreseeable future. Pursuant to our Loan Agreement, we are prohibited from paying any dividends without the prior written consent of the Lenders. Subject to our obligations under the Loan Agreement, the payment by us of dividends, if any, in the future, rests within the discretion of our board of directors and will depend, among other things, upon our earnings, capital requirements and financial condition.

Recent Sales of Unregistered Securities

On October 7, 2016, we issued an aggregate of 309,916 shares of our common stock to the former members of CARgenix Holdings LLC (the "CARgenix Members") in accordance with the terms of the Membership Interest Purchase Agreement, dated August 7, 2015, as amended, pursuant to which we acquired CARgenix Holdings LLC (the "MIPA"). The shares were issued and sold to the CARgenix Members in transactions exempt from registration under the Securities Act of 1933, as amended, in reliance on Section 4(a)(2) thereof and Rule 506 of Regulation D thereunder. In the MIPA, each of the CARgenix Members represented that it was an "accredited investor," as defined in Regulation D, and was acquiring the shares for investment only and not with a view towards, or for resale in connection with, the public sale or distribution thereof.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table sets forth additional information with respect to the shares of common stock that may be issued upon the exercise of options and other rights under our existing equity compensation plans and arrangements in effect as of December 31, 2016. The information includes the number of shares covered by, and the weighted average exercise price of, outstanding options and the number of shares remaining available for future grant, excluding the shares to be issued upon exercise of outstanding options.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders [1]	4,332,876	$ 7.86	2,924 [2]
Equity compensation plans not approved by security holders [3]	3,200	1.12	—
Total	4,336,076		2,924

(1) Comprised of our 2009 Amended and Restated Stock Incentive Plan (the “2009 Plan”).

(2) Comprised solely of shares subject to awards available for future issuance under the 2009 Plan. In June 2014, our stockholders approved, among other items, the amendment and restatement of the 2009 Plan to increase the number of common stock authorized to be issued pursuant to the 2009 Plan to 3,760,000. In June 2016, the Company's stockholders approved, among other items, another amendment and restatement of the 2009 Plan to increase the number of common shares authorized to be issued pursuant to the 2009 Plan to 6,260,000. Such shares of common stock are reserved for issuance to our employees, non-employee directors and consultants. As of December 31, 2016, 6,260,000 shares were authorized under the 2009 Plan, with 1,414,220 shares remaining available for future issuance under the plan.

(3) Comprised solely of shares issued to non-employee directors prior to our adoption of the 2009 Plan.

Performance Graph

The following graph compares the cumulative total stockholder return on our common stock from December 31, 2011 to December 31, 2016 with the cumulative total return of (i) the NASDAQ Market Index and (ii) the NASDAQ Biotechnology Index. This graph assumes the investment of $100.00 after the market closed on December 31, 2011 in our common stock, and in the NASDAQ Market Index and the NASDAQ Biotechnology Index, and it assumes any dividends are reinvested. The stock price performance included in this graph is not necessarily indicative of future stock price performance.

Item 6. Selected Financial Data.

You should read the selected consolidated financial data presented below in conjunction with the audited consolidated financial statements appearing elsewhere in this Form 10-K and the notes to those statements and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The selected consolidated financial data as of December 31, 2016 and 2015, and for each of the years in the three-year period ended December 31, 2016, have been derived from our audited consolidated financial statements which appear elsewhere in this Form 10-K. The selected consolidated financial data as of December 31, 2014, 2013 and 2012 and for the years ended December 31, 2013 and 2012 have been derived from our audited consolidated financial statements which are not included in this Form 10-K. The historical results are not necessarily indicative of the operating results to be expected in the future. All financial information presented has been prepared in United States dollars and in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP").

	Year Ended December 31,				
(In thousands, except per share data)	2016	2015	2014	2013	2012
Income Statement Data:					
Revenues:					
Grant	$1,033	$1,530	$488	$452	$584
Royalties and licenses	4,017	3,010	3,337	8	—
Sales and services	3,102	50	—	—	—
Total revenues	8,152	4,590	3,825	460	584
Loss from operations	(96,777)	(74,005)	(34,742)	(21,668)	(4,852)
Net loss	$(63,937)	$(50,074)	$(34,657)	$(21,911)	$(4,845)
Net loss per share - basic and diluted	$(1.21)	$(1.24)	$(1.30)	$(1.46)	$(0.42)
Weighted average number of shares during the period - basic and diluted	50,360	36,909	26,679	15,046	11,405

	As of December 31,				
(In thousands)	2016	2015	2014	2013	2012
Balance Sheet Data:					
Cash and cash equivalents	$82,398	$39,038	$71,902	$31,667	$5,091
Intangibles, net	64,776	3,912	4,357	33,321	—
Goodwill	41,548	20,626	24,041	24,041	—
Total assets	401,586	343,519	141,541	92,582	6,781
Total liabilities	315,084	202,581	32,828	25,773	584
Stockholders' equity	86,502	140,938	108,713	66,809	6,197

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 in conjunction with the financial statements and the related notes and other information that are included elsewhere in this Form 10-K. This discussion contains forward-looking statements based upon current expectations that involve risks and uncertainties, such as our plans, objectives, expectations and intentions. Actual results and the timing of events could differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including those set forth under the cautionary note regarding "Forward-Looking Statements" contained elsewhere in this Form 10-K. Additionally, you should read the "Risk Factors" section of this Form 10-K for a

discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a clinical stage biotechnology company focused on delivering clinically meaningful therapies to patients and their families, globally. Our primary focus is to transform cancer into a treatable or chronically manageable disease. We also have programs assessing the use of our technologies and products in auto-immune, inflammatory, neurodegenerative and infectious diseases and pain indications with high unmet medical needs.

At our core, we are an antibody-centric company and leverage our proprietary G-MAB™ library and targeted delivery modalities to generate the next generation of cancer therapeutics. Our validated fully human antibodies include PD-1, PD-L1, CD38, CD123, CD47, c-MET, VEGFR2, CCR2, OX40, TIGIT and CD137 among others. Our vision is to leverage these antibodies in conjunction with proprietary targeted delivery modalities to generate the next generation of cancer therapeutics. These modalities include proprietary antibody drug conjugates ("ADCs"), bispecific approaches, as well as TCR-like antibodies. With LA Cell, Inc. ("LA Cell"), our joint venture with City of Hope, our objective is to become the global leader in the development of antibodies against intracellular targets such as STAT3, mutant KRAS, MYC, p53 and TAU. Additionally, we have acquired and are assessing the regulatory and strategic path forward for our portfolio of late stage biosimilar/biobetter antibodies based on Erbitux®, Remicade®, Xolair®, and Simulect® as these may represent nearer term commercial opportunities.

Although we intend to retain ownership and control of product candidates by advancing their development, we regularly also consider, (i) partnerships with pharmaceutical or biopharmaceutical companies and (ii) license or sale of certain products in each case, in order to balance the risks and costs associated with drug discovery, development and commercialization with efforts to maximize our stockholders' returns. Our partnering objectives include generating revenue through license fees, milestone-related development fees and royalties as well as profit shares or joint ventures to generate potential returns from our product candidates and technologies.

Significant Developments

Yuhan Agreement

In March 2016, we and Yuhan Corporation, a South Korea company ("Yuhan"), entered into an agreement to form a joint venture company called ImmuneOncia Therapeutics, LLC ("ImmuneOncia") to develop and commercialize a number of immune checkpoint antibodies against undisclosed targets for both hematological malignancies and solid tumors. In April 2016, Yuhan purchased $10.0 million of shares of our common stock, $0.0001 par value per share ("Common Stock"), and warrants as part of our private placement offering. Separately, under the terms of the joint venture agreement, Yuhan contributed an initial investment of $10.0 million to ImmuneOncia, and we granted ImmuneOncia an exclusive license to one of our immune checkpoint antibodies for specified countries while retaining the rights for the U.S., European and Japanese markets, as well as global rights for ImmuneOncia to two additional antibodies that will be selected by ImmuneOncia from a group of pre-specified antibodies from our immuno-oncology antibody portfolio. Yuhan owns 51% of ImmuneOncia, while we own 49%.

3SBio Term Sheet

In June 2016, we and TNK entered into a binding term sheet with Shenyang Sunshine Pharmaceutical Company Ltd ("3SBio"), a China based company, to form a joint venture to develop and commercialize proprietary immunotherapies, including those developed from, including or using TNK's CAR-T technology targeting CEA positive cancers. Due diligence and negotiations between 3SBio and us for the definitive agreement(s) are currently ongoing. In June 2016, 3SBio purchased $10.0 million of Common Stock and warrants as part of our private placement offering.

Servier License and Collaboration Agreement

In July 2016, we announced a license and collaboration agreement with Les Laboratoires Servier, SAS, a corporation incorporated under the laws of France, and Institut de Recherches Internationales Servier, a company duly organized and existing under the laws of France (individually and collectively, "Servier") for the development, manufacture and commercialization of products using our fully human immuno-oncology anti-PD-1 mAb STI-A1110. The financial terms of the agreement include, among other things, a non-refundable upfront payment to Sorrento of €25 million, or $27.4 million, which we received in July 2016. We may also receive development milestone payments for the initial product and each additional product. We may receive up to €710 million in various payments based on commercial sales milestones related to annual net sales levels for the initial product and then also for each additional product. In

addition to the commercial sales milestones, we will be entitled to receive variable royalties on the sales of all commercialized products ranging from high single-digit to double-digit percentages. During the twelve months ended December 31, 2016, we recognized $3.8 million in license fee revenue pursuant to the agreement.

CHA Biotech Term Sheet

In August 2016, we announced a binding term sheet to create a joint venture (the "JV") with CHA Biotech Co., LTD. ("CBT") of South Korea to develop and commercialize proprietary CAR modified cellular therapies based on CBT's Activated Killer Cell ("AKC") technology in combination with five of our CARs for all disease conditions, including oncology and infectious diseases. The JV will cover products on a global basis with the exception of the greater Chinese market, which includes Mainland China, Hong Kong, Macau and Taiwan. In addition, we will obtain an exclusive license to develop and commercialize CBT's novel investigator-initiated trial stage AKC technology in major territories, including the United States and Europe, and with a co-exclusive license in China. Under the terms of the Term Sheet, we and CBT will make contributions of $2 million to the JV, and we will grant the JV an

exclusive license to five CARs solely for combination with the AKC technology, while CBT will contribute its AKC technology. CBT will initially own 51% of the JV while we will initially hold the remaining 49%. We, under a royalty bearing license, will also gain access to the AKC technology for the use outside the JV alone or with any other of our product candidates. Due diligence and negotiations between CBT and us for the definitive agreement(s) are currently ongoing. However, the binding term sheet is currently terminable by either party at will and no assurances can be made that the transaction will be completed.

Scilex Acquisition

On November 8, 2016, we entered into a Stock Purchase Agreement with Scilex Pharmaceuticals Inc. ("Scilex") and a majority of the stockholders of Scilex (the "Scilex Stockholders") pursuant to which we acquired from the Scilex Stockholders approximately 72% of the outstanding capital stock of Scilex. Scilex's lead product candidate, ZTlido™, is a next-generation lidocaine patch currently in development for the treatment of postherpetic neuralgia ("PHN"), a severe neuropathic pain condition. ZTlido™ is manufactured by our collaboration partner in their state of the art manufacturing facility.

Celularity Transaction

In November 2016, we entered into a non-binding term sheet between us, our subsidiary, TNK, and Celularity, Inc. ("Celularity"), a research and development company, setting forth the terms and conditions by which we or TNK with one or more third parties would contribute certain assets to Celularity (the "Celularity Transaction"). In addition, at this time, we loaned $5.0 million to Celularity pursuant to a promissory note issued to us (the "Celularity Note"). Pursuant to the terms of the Celularity Note, the loan will be due and payable in full on the earlier of November 1, 2017 and the occurrence of an event of default under the Celularity Note (the "Maturity Date"). The Celularity Note also provides that, in certain circumstances, we shall loan Celularity up to an additional $5.0 million over the next 12 months. In the event that Celularity meets certain minimum financing conditions prior to the Maturity Date, all outstanding amounts under the Celularity Note shall be forgiven.

Binding Term Sheet Regarding Acquisition of Semnur Pharmaceuticals, Inc.

On August 15, 2016, we, Scintilla and Semnur Pharmaceuticals, Inc. ("Semnur") entered into a binding term sheet (the "Semnur Binding Term Sheet") setting forth the terms and conditions by which Scintilla will, through a subsidiary, purchase all of the issued and outstanding equity of Semnur (the "Semnur Acquisition"). The Semnur Binding Term Sheet provides that, contingent upon the execution of a definitive agreement between the parties (the "Definitive Agreement") and subject to certain conditions, Scintilla will, at the closing of the Semnur Acquisition (the "Semnur Closing"), make an initial payment of $60.0 million (the "Initial Consideration") to the equityholders of Semnur in exchange for all of the issued and outstanding equity of Semnur. The Initial Consideration will consist of $40.0 million in cash and $20.0 million in shares of our common stock (the "Semnur Stock Consideration"). The Semnur Binding Term Sheet also provides that the number of shares of our common stock comprising the Semnur Stock Consideration will be calculated based on the volume weighted average closing price of our common stock for the 30 consecutive trading days ending on the date that is three days prior to the execution of the Definitive Agreement. $6.0 million of the Semnur Stock Consideration will be placed into escrow, a portion of which will be held for a period of up to six or 12 months to secure certain obligations of Semnur and its equityholders in connection with the Semnur Acquisition. At the Semnur Closing, we will enter into a registration rights agreement with certain of Semnur's equityholders, pursuant to which we will agree to seek the registration for resale of the shares of our common stock comprising the Semnur Stock Consideration.

In addition to the Initial Consideration, Scintilla may pay additional consideration of up to $140.0 million to Semnur's equityholders upon Scintilla's completion of certain clinical studies and trials, receipt of certain regulatory approvals and the achievement of certain sales targets following the Semnur Closing.

Under the Semnur Binding Term Sheet, either party may terminate the Semnur Binding Term Sheet.

As of December 31, 2016, the Semnur Acquisition had not closed. The final terms of the Semnur Acquisition are subject to the negotiation and finalization of the Definitive Agreement and any other agreements relating to the Semnur Acquisition, and the material terms of the Semnur Acquisition are expected to differ from those set forth in the Semnur Binding Term Sheet. In addition, the Semnur Closing will be subject to various customary and other closing conditions.

A member of our board of directors is Semnur's Chief Executive Officer and a member of Semnur'sBoard of Directors and currently owns approximately 5.5% of Semnur's total outstanding capital stock. Joseph Gunnar & Co., LLC provided an opinion to our board of directors opining that the consideration to be paid by Scintilla in the Semnur Acquisition is fair, from a financial point of view, to our stockholders.

Binding Term Sheet Regarding Acquisition of Virttu Biologics Limited

On November 15, 2016, we, TNK and Virttu Biologics Limited ("Virttu") entered into a binding term sheet (the "Virttu Binding Term Sheet") setting forth the terms and conditions by which TNK will purchase all of the issued and outstanding equity of Virttu (the "Virttu Acquisition"). Subject to certain conditions, at the closing of the Virttu Acquisition (the "Virttu Closing"), we will issue to the equityholders of Virttu an aggregate of $5.0 million of shares of our common stock (the "Closing Shares"). The number of Closing Shares issuable shall be determined based on the closing price of our common stock on the date of the Virttu Closing. Further, upon the occurrence of the closing of the next third party equity financing of TNK in which TNK receives at least $50.0 million in proceeds (a "Financing"), TNK will issue to the equityholders of Virttu an aggregate of $20.0 million of shares of the same class and series of capital stock of TNK as is issued in such Financing, based upon the valuation of TNK achieved in such Financing (the "TNK Financing Shares"). If a Financing has not occurred within twelve months of the Virttu Closing (the "Financing Due Date"), the equityholders of Virttu will be issued an aggregate of $20.0 million of shares of our common stock in lieu of the TNK Financing Shares (the "Sorrento Financing Shares"). The number of Sorrento Financing Shares issuable shall be determined based on the closing price of our common stock on the Financing Due Date. In the event that the TNK Financing Shares are issued, 20% of the TNK Financing Shares will be placed into escrow until the Financing Due Date to secure the indemnification obligations of Virttu and its equityholders for breaches of their representations, warranties or covenants under the definitive agreements governing the Virttu Acquisition. The Closing Shares and the TNK Financing Shares or the Sorrento Financing Shares will be issued to the Virttu equityholders on a pro rata basis based on each such equityholder's equity interest in Virttu as of the Virttu Closing.

As of December 31, 2016, the Virttu Acquisition had not closed. The final terms of the Virttu Acquisition are subject to the negotiation and finalization of the definitive agreements relating to the Virttu Acquisition and the material terms of the Virttu Acquisition may differ from those set forth in the Virttu Binding Term Sheet. In addition, the Virttu Closing will be subject to various customary and other closing conditions.

Results of Operations

The following discussion of our operating results explains material changes in our results of operations for the years ended December 31, 2016, 2015 and 2014. The discussion should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this Form 10-K.

Comparison of the Years Ended December 31, 2016 and 2015

Revenues. Revenues were $8,152 thousand for the year ended December 31, 2016, as compared to $4,590 thousand for the year ended December 31, 2015. The net increase of $3,562 thousand is primarily due to an increase in royalty and licensing activities for the year ended December 31, 2016 compared to the corresponding period of 2015. Royalties and license revenues increased $3,052 thousand for the year ended December 2016 as compared to the same period of 2015. Sales and service revenues generated from the sale of customized reagents and providing contract development services increased $1,007 thousand for the year ended December 2016 as compared to the same period of 2015.

In June 2014, the National Institute of Allergy and Infectious Diseases ("NIAID"), a division of the National Institutes of Health ("NIH") awarded us a Phase II Small Business Technology Transfer ("STTR") grant (the "Staph Grant III Award") to support the advanced preclinical development of human bispecific antibody therapeutics to prevent and treat Staphylococcus aureus ("S. aureus" or "Staph") infections, including methicillin-resistant S. aureus ("MRSA"). The project period for the Staph Grant III Award covered a two-year period which commenced in June 2014, with total funds available of approximately $1 million per year for up to 2 years. During the years ended December 31, 2016 and 2015, we recorded $699 thousand and $884 thousand of revenue, respectively, associated with the Staph Grant III Award.

In June 2014, we were awarded a Phase I STTR grant entitled “Anti-Pseudomonas Immunotherapy and Targeted Drug Delivery” from the NIAID (the “Phase I STTR Grant Award”). The Phase I STTR Grant Award was to support the preclinical development of novel anti-Pseudomonas aeruginosa mAb immunotherapy or an antibody-mediated targeted antibiotic delivery vehicle. Each modality may be an effective and safe stand-alone therapy and/or a component of a “cocktail” therapeutic option for prevention and treatment of P. aeruginosa infections. The project period for the Phase I STTR Grant Award covered a two-year period which commenced in July 2014, with total funds available of approximately $300 thousand per year for up to 2 years. During the years ended December 31, 2016 and 2015, we recorded $256 thousand and $302 thousand of revenue, respectively, associated with the Phase I STTR Grant Award.

In July 2014, we were awarded a Phase I STTR grant from the National Cancer Institute ("NCI"), a division of the NIH, entitled "Targeting of Myc-Max Dimerization for the Treatment of Cancer" (the "Phase I Myc Grant Award"). The Phase I Myc Grant Award was to support the preclinical development of the Myc inhibitor, which interferes with the protein-protein interaction ("PPI") between Myc and its obligatory dimerization partner, Max, preventing sequence-specific binding to DNA and subsequent initiation of oncogenic transformation. The project period for the Phase I Myc Grant Award covered a one-year period which commenced in August 2014, with total funds available of approximately $225 thousand. During the years ended December 31, 2016 and 2015, we recorded $0 and $139 thousand of revenue, respectively associated with the Phase I Myc Grant Award.

In August 2014, we were awarded a Phase I Small Business Innovation Research ("SBIR") grant from the National Heart, Lung, and Blood Institute ("NHBLI"), a division of the NIH, entitled "Human Anti-WISP-1 Antibodies for Treatment of Idiopathic Pulmonary Fibrosis" (the "Phase I WISP1 Grant Award"). The Phase I WISP1 Grant Award was to advance our immunotherapy targeting WNT-1 Inducible Signaling Protein-1("WISP1") for the treatment of Idiopathic Pulmonary Fibrosis ("IPF"). WISP1 is a protein that has been shown to be upregulated in IPF, linked to key growth factors, cellular proliferation, hyperplasia and is correlated with late stage cancers. IPF is a fatal disease, which results in progressive loss of lung function due to fibrosis of the lungs. The project period for the Phase I WISP1 Grant Award covered a one-year period which commenced in August 2014, with total funds available of approximately $225 thousand. During the years ended December 31, 2016 and 2015, we recorded $51 thousand and $156 thousand of revenue, respectively, associated with the Phase I WISP1 Grant Award.

Revenues from a human immuno-oncology anti PD-L1 license agreement for each of the years ended December 31, 2016 and 2015, were $50 thousand. We had no other revenue during the years ended December 31, 2016 and 2015 as we have not yet developed any product candidates for commercialization or earned any licensing or royalty payments.

We expect that any revenue we generate will fluctuate from year to year as a result of the unpredictability of the demand for products and services offered as well as the timing and amount of grant awards, research and development reimbursements and other payments received under any strategic collaborations.

Cost of revenues. Cost of revenues for the years ended December 31, 2016 and 2015 were $811 thousand and $1,950 thousand, respectively. The decrease is due primarily to lower direct materials and overhead costs for the year ended December 31, 2016 compared to the prior year period. The costs generally include employee salaries and benefits, direct materials and overhead costs including rent, depreciation, utilities, facility maintenance and insurance. We expect cost of revenues to fluctuate with related revenues.

Research and Development Expenses. Research and development expenses for the years ended December 31, 2016 and 2015 were $42,175 thousand and $31,343 thousand, respectively. Research and development expenses include the costs related to our RTX program activities towards entering into future clinical trials, costs to identify, isolate and advance human antibody drug candidates derived from our libraries as well as advancing our ADC preclinical drug candidates, preclinical testing expenses and the expenses associated with fulfilling our development obligations related to the NIH grant awards (collectively the "NIH Grants"). Such expenses consist primarily of salaries and personnel related expenses, stock-based compensation expense, clinical development expenses, preclinical testing, lab supplies, consulting costs, depreciation and other expenses. The increase of $10,832 thousand is primarily attributable to preclinical testing and completion of our BE registration trial prior to its sale in July 2015, salaries and compensation related expense, consulting and lab supply costs incurred in connection with our expanded research and development activities and activities to advance RTX into clinical trials and potentially pursue other development activities. We expect research and development expenses to increase in absolute dollars as we: (i) advance RTX and our other product candidates into clinical trials and pursue other development, acquire, develop and manufacture clinical trial materials and increase other regulatory operating activities, (ii) incur incremental expenses associated with our efforts to further advance a number of potential product candidates into preclinical development activities, (iii) continue to identify and advance a number of fully human therapeutic antibody and ADC preclinical product candidates, (iv) incur higher salary, lab supply and infrastructure costs incurred in connection with supporting all of

our programs, (v) invest in our joint ventures, collaborations or other third party agreements, and (vi) expand our corporate infrastructure.

Acquired In-process Research and Development Expenses. Acquired in-process research and development expenses for the years ended December 31, 2016 and 2015 were $45,000 thousand and $24,013 thousand, respectively. Acquired in-process research and development expenses for the year ended December 31, 2016 include costs associated with the acquisition of acquired in-process research and development from Mabtech Limited and LA Cell. Acquired in-process research and development expenses for the year ended December 31, 2015 include costs associated with the purchase price of the license rights from Mabtech Limited, the purchase price of the license rights from the City of Hope and the purchase price of CARgenix Holdings LLC and BDL Products, Inc.

General and Administrative Expenses. General and administrative expenses for the years ended December 31, 2016 and 2015 were $24,219 thousand and $20,132 thousand, respectively. General and administrative expenses consist primarily of salaries and personnel related expenses for executive, finance and administrative personnel, stock-based compensation expense, professional fees, infrastructure expenses, legal and accounting expenses and other general corporate expenses. The increase of $4,087 thousand is primarily attributable to higher salaries and related compensation expenses, stock-based compensation, legal costs related to acquisitions, general corporate and intellectual property matters, consulting and business development expenses and higher compliance costs associated with our public reporting obligations. We expect general and administrative expenses to increase in absolute dollars as we: (i) incur incremental expenses associated with expanded operations and development efforts, (ii) expand our efforts to ensure continued compliance with our public reporting obligations, (iii) build our infrastructure, and (iv) invest in our joint ventures, collaborations or other third party agreements.

Intangible Amortization. Intangible amortization for the years ended December 31, 2016 and 2015 was $845 thousand and $1,157 thousand, respectively. The decrease in the year ended December 31, 2016 as compared to the same period in 2015 is due to license rights being amortized on a straight line basis through the date those assets were held for sale.

Gain or Loss on derivative liability. Gain on derivative liability for the year ended December 31, 2016 was $5,520 thousand compared to a loss on derivative liability of $3,360 thousand for the year ended December 31, 2015. The increase in the year ended December 31, 2016 as compared to the same period in 2015 is due to the expiration of the unexercised derivative liability on March 31, 2016 associated with the cancelled call option on shares of NantKwest, Inc. stock.

Gain or Loss on equity investments. Gain on equity investments for the year ended December 31, 2016 was $435 thousand compared to a loss on equity investments of $4,041 thousand for the year ended December 31, 2015. The increase was primarily due to the recognition of our portion of the loss from operations from our joint venture entities which did not exist during the same period in 2015.

Interest Expense. Interest expense for the years ended December 31, 2016 and 2015 was $1,610 thousand and $1,652 thousand, respectively.

Interest Income. Interest income for the years ended December 31, 2016 and 2015 was $272 thousand and $24 thousand, respectively. The increase in interest income resulted in an increase in notes receivables in the current year compared to prior period. We expect that continued low interest rates will significantly limit our interest income in the near term.

Income tax expense (benefit). Income tax benefit for the year ended December 31, 2016 was $896 thousand. Income tax expense for the year ended December 31, 2015 was $36,314 thousand.

Net Loss. Net loss for the years ended December 31, 2016 and 2015 was $63,937 thousand and $50,074 thousand, respectively. The increase in net loss is mainly attributable to the expanded research and development activities, and an increase in acquired in-process research and development and general and administrative activities.

Comparison of the Years Ended December 31, 2015 and 2014

Revenues. Revenues were $4,590 thousand for the year ended December 31, 2015, as compared to $3,825 thousand for the year ended December 31, 2014. The net increase of $765 thousand is primarily due to an increase in activities under our active grants for the year ended December 31, 2015 compared to the corresponding period of 2014 due primarily to an increase in active grants in the year ending December 31, 2015. Sales and service revenues generated from the sale of customized reagents and providing contract development services decreased $277 thousand for the year ended December 2015 as compared to the same period of 2014.

In June 2012, we were awarded a third Advanced Technology STTR grant, with an initial award of $300 thousand, to support our program to generate and develop novel human antibody therapeutics to combat Staph infections, including Methicillin-resistant Staph (the “Staph Grant II Award”). The project period for the Staph Grant II Award covered a two-year period which commenced in June 2012, with a total grant award of $600 thousand. The Staph Grant II Award revenues for the years ended December 31, 2015, 2014 and 2013, were $0, $150 thousand and $308 thousand, respectively.

In June 2014, the NIAID, a division of the NIH awarded us the Staph Grant III Award, a Phase II STTR grant to support the advanced preclinical development of human bispecific antibody therapeutics to prevent and treat Staph infections, including MRSA. The project period for the Staph Grant III Award covered a two-year period which commenced in June 2014, with total funds available of approximately $1 million per year for up to 2 years. During the years ended December 31, 2015 and 2014, we recorded $884 thousand and $220 thousand of revenue, respectively, associated with the Staph Grant III Award.

In June 2014, we were awarded the Phase I STTR Grant Award, a Phase I STTR grant entitled “Anti-Pseudomonas Immunotherapy and Targeted Drug Delivery” from the NIAID. The Phase I STTR Grant Award was to support the preclinical development of novel anti-Pseudomonas aeruginosa mAb immunotherapy or an antibody-mediated targeted antibiotic delivery vehicle. Each modality may be an effective and safe stand-alone therapy and/or a component of a “cocktail” therapeutic option for prevention and treatment of P. aeruginosa infections. The project period for the Phase I STTR Grant Award covered a two-year period which commenced in July 2014, with total funds available of approximately $300 thousand per year for up to 2 years. During the years ended December 31, 2015 and 2014, we recorded $302 thousand and $28 thousand of revenue, respectively, associated with the Phase I STTR Grant Award.

In July 2014, we were awarded the Phase I Myc Grant Award, a Phase I STTR grant from the NCI, a division of the NIH, entitled “Targeting of Myc-Max Dimerization for the Treatment of Cancer”. The Phase I Myc Grant Award was to support the preclinical development of the Myc inhibitor, which interferes with the PPI between Myc and its obligatory dimerization partner, Max, preventing sequence-specific binding to DNA and subsequent initiation of oncogenic transformation. The project period for the Phase I Myc Grant Award covered a one-year period which commenced in August 2014, with total funds available of approximately $225 thousand. During the years ended December 31, 2015 and 2014, we recorded $139 thousand and $86 thousand of revenue, respectively associated with the Phase I Myc Grant Award.

In August 2014, we were awarded the Phase I WISP1 Grant Award, a Phase I SBIR grant from the NHBLI, a division of the NIH, entitled “Human Anti-WISP-1 Antibodies for Treatment of Idiopathic Pulmonary Fibrosis”. The Phase I WISP1 Grant Award was to advance our immunotherapy targeting WISP1 for the treatment of IPF. WISP1 is a protein that has been shown to be upregulated in IPF, linked to key growth factors, cellular proliferation, hyperplasia and is correlated with late stage cancers. IPF is a fatal disease, which results in progressive loss of lung function due to fibrosis of the lungs. The project period for the Phase I WISP1 Grant Award covered a one-year period which commenced in August 2014, with total funds available of approximately $225 thousand. During the years ended December 31, 2015 and 2014, we recorded $156 thousand and $5 thousand of revenue, respectively, associated with the Phase I WISP1 Grant Award.

Revenues from a human immuno-oncology anti PD-L1 license agreement for the years ended December 31, 2015 and 2014, were $50 thousand and $0, respectively. We had no other revenue during the years ended December 31, 2015 and 2014 as we have not yet developed any product candidates for commercialization or earned any licensing or royalty payments.

We expect that any revenue we generate will fluctuate from year to year as a result of the unpredictability of the demand for products and services offered as well as the timing and amount of grant awards, research and development reimbursements and other payments received under any strategic collaborations.

Cost of revenues. Cost of revenues for the years ended December 31, 2015 and 2014 were $1,950 thousand and $2,043 thousand, respectively. The decrease is due primarily to lower sales and services revenues for the year ended December 31, 2015 compared to the prior year period. The costs generally include employee salaries and benefits, direct materials and overhead costs including rent, depreciation, utilities, facility maintenance and insurance. We expect cost of revenues to fluctuate with related revenues.

Research and Development Expenses. Research and development expenses for the years ended December 31, 2015 and 2014 were $31,343 thousand and $23,983 thousand, respectively. Research and development expenses include the costs related to Cynviloq™ prior to its sale in July 2015, costs to advance our RTX program activities towards entering into future clinical trials, costs to identify, isolate and advance human antibody drug candidates derived from our libraries as well as advancing our ADC preclinical drug candidates, preclinical testing expenses and the expenses associated with fulfilling our development obligations related to the NIH Grants. Such expenses consist primarily of salaries and personnel related expenses, stock-based compensation expense, clinical development expenses,

preclinical testing, lab supplies, consulting costs, depreciation and other expenses. The increase of $7,360 thousand is primarily attributable to preclinical testing and completion of our BE registration trial prior to its sale in July 2015, salaries and compensation related expense, consulting and lab supply costs incurred in connection with our expanded research and development activities and activities to advance RTX into clinical trials and potentially pursue other development activities.

Acquired In-process Research and Development Expenses. Acquired in-process research and development expenses for the years ended December 31, 2015 and 2014 were $24,013 thousand and $209 thousand, respectively. Acquired in-process research and development expenses for the year ended December 31, 2015 include costs associated with the purchase price of the license rights from Mabtech Limited, the purchase price of the license rights from the City of Hope and the purchase price of CARgenix and BDL. Acquired in-process research and development expenses for the year ended December 31, 2014 include the costs associated with a research agreement.

General and Administrative Expenses. General and administrative expenses for the years ended December 31, 2015 and 2014 were $20,132 thousand and $9,987 thousand, respectively. General and administrative expenses consist primarily of salaries and personnel related expenses for executive, finance and administrative personnel, stock-based compensation expense, professional fees, infrastructure expenses, legal and accounting expenses and other general corporate expenses. The increase of $10,145 thousand is primarily attributable to higher salaries and related compensation expenses, stock-based compensation, legal costs related to acquisitions, general corporate and IP matters, consulting and business development expenses and higher compliance costs associated with our public reporting obligations.

Intangible Amortization. Intangible amortization for the years ended December 31, 2015 and 2014 was $1,157 thousand and $2,345 thousand, respectively. The decrease in the year ended December 31, 2015 as compared to the same period in 2014 is due to license rights being amortized on a straight line basis through the date those assets were held for sale.

Gain on sale of IgDraSol. Gain on sale of IgDraSol for the years ended December 31, 2015 and 2014 was $69,274 thousand and $0, respectively.

Loss on derivative liability. Loss on derivative liability for the years ended December 31, 2015 and 2014 was $3,360 thousand and $0, respectively. The increase in the year ended December 31, 2015 as compared to the same period in 2014 is due to an increase in the derivative's fair value between the reporting periods.

Loss on equity investments. Loss on equity investments for the years ended December 31, 2015 and 2014 was $4,041 thousand and $0, respectively. The increase in the year ended December 31, 2015 as compared to the same period in 2014 is due to the recognition of an other-than-temporary impairment of $4,000 thousand on our joint venture, NantCancerStemCell, LLC ("NantStem"), and our portion of the loss from operations from our joint ventures.

Interest Expense. Interest expense for the years ended December 31, 2015 and 2014 was $1,652 thousand and $1,629 thousand, respectively. The increase in interest expense resulted primarily from higher average borrowings under the amended loan and security agreement entered into in March 2014.

Interest Income. Interest income for the years ended December 31, 2015 and 2014 was $24 thousand and $12 thousand, respectively.

Income tax expense (benefit). Income tax expense for the year ended December 31, 2015 was $36,314 thousand. Income tax benefit for the year ended December 31, 2014 was $1,702 thousand. The increase in income tax expense resulted primarily from the recognition of an indefinite-lived tax liability and return to provision adjustments.

Net Loss. Net loss for the years ended December 31, 2015 and 2014 was $50,074 thousand and $34,657 thousand, respectively. The increase in net loss is mainly attributable to the expanded research and development activities, and an increase in acquired in-process research and development and general and administrative activities.

Liquidity and Capital Resources

As of December 31, 2016, we had $82.4 million in cash and cash equivalents attributable in part to the net proceeds received under the loan and security agreement that we and certain of our domestic subsidiaries (collectively, the "Borrowers") entered into with Hercules Capital, Inc. ("Hercules") on November 23, 2016, as amended (as so amended, the "Loan Agreement"). As of December 31, 2016, we had $50.0 million of long term debt associated with the Loan Agreement. The Loan Agreement contains covenants requiring us (i) to achieve certain fundraising requirements by certain dates, and (ii) to maintain a minimum amount of unrestricted cash prior to achieving the corporate and fundraising milestones. We are currently in compliance with these covenants, and have plans in place to maintain compliance with these covenants. To the extent we are unable to execute on these plans to maintain compliance with these covenants, or we are unable to amend the Loan Agreement to maintain such compliance then we would be in default under the Loan Agreement and the outstanding loan balance may be declared immediately due and payable. If the outstanding loan balance was payable in the next 12 months and we are unable to secure additional sources of financing, we would not have enough cash to fund our operating and capital requirements for the next 12 months. We cannot be certain that additional funding will be available on acceptable terms, or at all. If we issue additional equity securities to raise funds, the ownership percentage of existing stockholders would be reduced. New investors may demand rights, preferences or privileges senior to those of existing holders of common stock. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us we may have to significantly delay, scale back or discontinue the development or commercialization of one or more of our product candidates. We may also seek collaborators for one or more of our current or future product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available. These factors raise substantial doubt about our ability to continue as a going concern. Our financial statements and related notes thereto included elsewhere in this Annual Report on Form 10-K do not include any adjustments that might result from the outcome of this uncertainty.

Cash Flows from Operating Activities. Net cash used for operating activities was $70.9 million for 2016 and is primarily attributable to our net loss of $63.9 millions and the gain on sale of marketable securities of $27.3 million.

We expect to continue to incur substantial and increasing losses and negative net cash flows from operating activities as we seek to expand and support our clinical and preclinical development and research activities and fund our joint ventures, collaborations and other third party agreements.

Cash Flows from Investing Activities. Net cash used for investing activities was $17.5 million for 2016 as compared to cash provided of $12.6 million for 2015. The net cash provided related primarily to purchases of investments of $6.0 million and fixed assets of $6.9 million.

We expect to increase our investment in equipment as we seek to expand and progress our research and development capabilities.

Cash Flows from Financing Activities. Net cash provided by financing activities was $131.7 million for 2016, which was primarily from the net proceeds from the issuance of common stock and the loan and security agreement and proceeds from the issuance of common stock, partially offset by cash payments for treasury shares.

Future Liquidity Needs. We have principally financed our operations through underwritten public offerings and private equity financings with aggregate net proceeds of $153.4 million, as we have not generated any product related revenue from our principal operations to date, and do not expect to generate significant revenue for several years, if ever. We will need to raise additional capital before we exhaust our current cash resources in order to continue to fund our research and development, including our plans for clinical and preclinical trials and new product development, as well as to fund operations generally. As and if necessary, we will seek to raise additional funds through various potential sources, such as equity and debt financings, or through corporate collaboration and license agreements. We can give no assurances that we will be able to secure such additional sources of funds to support our operations, or, if

such funds are available to us, that such additional financing will be sufficient to meet our needs.

We anticipate that we will continue to incur net losses into the foreseeable future as we: (i) advance RTX and other product candidates into clinical trials and potentially pursue other development, (ii) continue to identify and advance a number of potential mAb and ADC product candidates into preclinical development activities, (iii) continue our development of, and seek regulatory approvals for, our product candidates, (iv) expand our corporate infrastructure, including the costs associated with being a NASDAQ listed public company, and (v) incur our share of joint venture and collaboration costs for our products and technologies.

We plan to continue to fund our operating losses and capital funding needs through public or private equity or debt financings, strategic collaborations, licensing arrangements, asset sales, government grants or other arrangements.

In November 2014, we filed an additional universal shelf registration statement on Form S-3 with the U.S. Securities and Exchange Commission (the “SEC”), which was declared effective by the SEC in December 2014. This Shelf Registration Statement

provides us with the ability to offer up to $250 million of securities, including equity and other securities as described in the registration statement. Included in the November 2014 shelf registration is a sales agreement prospectus covering the offering, issuance and sale by us of up to a maximum aggregate offering price of $50.0 million of our common stock that may be issued and sold under a sales agreement with MLV & Co. LLC (the "ATM Facility"). During the twelve months ended December 31, 2016, we sold approximately $3.6 million in shares of common stock under the ATM Facility. We have the ability to offer up to $46.4 million of additional shares of common stock under the ATM Facility, subject to certain limitations.

Pursuant to this Shelf Registration Statement, we may offer such securities from time to time and through one or more methods of distribution, subject to market conditions and our capital needs. Specific terms and prices will be determined at the time of each offering under a separate prospectus supplement, which will be filed with the SEC at the time of any offering.

On April 3, 2016, we entered into a Securities Purchase Agreement (the "ABG Purchase Agreement") with ABG SRNE Limited and Ally Bridge LB Healthcare Master Fund Limited (collectively, "Ally Bridge"), pursuant to which, among other things, we agreed to issue and sell to Ally Bridge and other purchasers that may be designated by Ally Bridge (collectively, the "ABG Purchasers"), in a private placement transaction (the "ABG Private Placement"), up to $50.0 million in shares of our common stock ("Common Stock") and warrants to purchase shares of Common Stock. Upon the closing of the ABG Private Placement, we issued to the ABG Purchasers (1) an aggregate of 9,009,005 shares (the "ABG Shares") of Common Stock, and (2) warrants to purchase an aggregate of 2,702,700 shares of Common Stock (each, an "ABG Warrant"). Each ABG Warrant had an exercise price of $8.50 per share, was immediately exercisable upon issuance, had a term of three years and was exercisable on a cash or cashless exercise basis.

Under the terms of the ABG Purchase Agreement, we were obligated to prepare and file with the SEC, within 30 days of the closing date of the ABG Private Placement, a registration statement to register for resale the ABG Shares and the shares of Common Stock issuable upon exercise of each ABG Warrant (the "ABG Warrant Shares"), and may be required to effect certain registrations to register for resale the ABG Shares and the ABG Warrant Shares in connection with certain "piggy-back" registration rights granted to the ABG Purchasers.

On April 3, 2016, we also entered into a Securities Purchase Agreement (collectively, the "Additional Purchase Agreements") with each of Beijing Shijilongxin Investment Co., Ltd. ("Beijing Shijilongxin"), FREJOY Investment Management Co., Ltd. ("Frejoy") and Yuhan, pursuant to which, among other things, we agreed to issue and sell, in separate private placement transactions: (1) to Beijing Shijilongxin, 8,108,108 shares of Common Stock, and a warrant to purchase 1,176,471 shares of Common Stock, for an aggregate purchase price of $45.0 million; (2) to Frejoy, 8,108,108 shares of Common Stock, and a warrant to purchase 1,176,471 shares of Common Stock, for an aggregate purchase price of $45.0 million; and (3) to Yuhan, 1,801,802 shares of Common Stock, and a warrant to purchase 235,294 shares of Common Stock, for an aggregate purchase price of $10.0 million. The warrants to be issued pursuant to each of the Additional Purchase Agreements (collectively, the "Additional Warrants" and, together with each ABG Warrant, the "Warrants") had an exercise price of $8.50 per share, were immediately exercisable upon issuance, had a term of three years and were exercisable on a cash or cashless exercise basis.

Under the terms of the Additional Purchase Agreements, each of Beijing Shijilongxin, Frejoy and Yuhan had the right to demand, at any time beginning six months after the closing of the transactions contemplated by the applicable Additional Purchase Agreement, that we prepare and file with the SEC a registration statement to register for resale such investor's shares of Common Stock purchased pursuant to the applicable Additional Purchase Agreement and the shares of Common Stock issuable upon exercise of such investor's Additional Warrant. In addition, we may be required to effect certain registrations to register for resale such shares in connection with certain "piggy-back" registration rights granted to Beijing Shijilongxin, Frejoy and Yuhan.

On May 2, 2016, we closed our private placement of common stock and warrants with Yuhan for gross proceeds of $10.0 million. Yuhan purchased 1,801,802 shares of common stock at $5.55 per share and a warrant to purchase

235,294 shares of common stock. The warrant was exercisable for three years at an exercise price of $8.50 per share.

Between May 31, 2016 and June 7, 2016, we closed on the remainder of the $150.0 million financing. The ABG Purchasers led the financing and, together with Beijing Shijilongxin and Frejoy, collectively purchased 25,225,221 shares of common stock at $5.55 per share, and warrants to purchase 5,055,642 shares of common stock for total consideration of $140.0 million.

On November 23, 2016, we and the other Borrowers entered into the Loan Agreement with Hercules. The Loan Agreement provides for a term loan of up to $75.0 million, subject to funding in multiple tranches (the “Term Loan”). The proceeds of the Term Loan will be used for general corporate purposes and coincided with the repayment of the outstanding debt financing arrangement with Oxford Finance LLC and Silicon Valley Bank.

The first tranche of $50.0 million of the Term Loan was funded upon execution of the Loan Agreement on November 23, 2016. Under the terms of the Loan Agreement, as most recently amended in March 2017, the Borrowers may, but are not obligated to,

request additional funds of up to $25.0 million which are available until June 30, 2018, subject to approval by Hercules' Investment Committee. The Term Loan will mature on December 1, 2020.

On December 31, 2016, we entered into Warrant and Note Cancellation and Share Forfeiture Agreements (the "Cancellation and Forfeiture Agreements") with certain investors (the "Investors") that held an aggregate of 7,838,259 shares of Common Stock and certain of the Warrants granting the right to purchase an aggregate of 1,137,316 shares of Common Stock. The Investors had also issued to us secured promissory notes (the "Notes") in an aggregate principal amount of $53.5 million, of which $43.5 million was then outstanding. Pursuant to the Cancellation and Forfeiture Agreements, effective December 31, 2016, the Warrants held by the Investors and the Notes were cancelled and the shares of Common Stock held by the Investors were forfeited and returned to us.

If we raise additional funds by issuing equity securities, substantial dilution to existing stockholders would result. If we raise 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 our ability to operate our business.

Critical Accounting Policies

Our consolidated financial statements are prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures. We evaluate our estimates and assumptions on an ongoing basis. Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Our actual results could differ from these estimates.

We believe the following accounting policies and estimates are most critical to aid in understanding and evaluating our reported financial results.

Stock-Based Compensation. We account for stock-based compensation in accordance with authoritative guidance for stock-based compensation, which requires us to measure the cost of employee services received in exchange for equity incentive awards, including stock options, based on the grant date fair value of the award. The fair value is estimated using the Black-Scholes option pricing model. The resulting cost is recognized over the period during which the employee is required to provide services in exchange for the award, which is usually the vesting period. We recognize compensation expense over the vesting period using the straight-line method and classify these amounts in the consolidated statements of operations based on the department to which the related employee reports. To the extent that we issue future stock incentive awards to employees, our stock-based compensation expense will be increased by the additional unearned compensation resulting from such additional issuances.

We account for equity instruments, including restricted stock or stock options, issued to non-employees in accordance with authoritative guidance for equity based payments to non-employees. Stock options issued to non-employees are accounted for at their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of options granted to non-employees is re-measured as they vest, and the resulting increase in value, if any, is recognized as expense during the period the related services are rendered. Restricted stock issued to non-employees is accounted for at its estimated fair value upon vesting. We evaluate the assumptions used to value stock awards to non-employees on a periodic basis. If factors change and we employ different assumptions, including any significant change in the estimated fair value of common stock, stock-based compensation expense may differ significantly from what we have recorded historically. In addition, to the extent that we issue future stock incentive awards to non-employees, our stock-based compensation expense will be increased by the additional unearned compensation resulting from such additional issuances.

Revenue Recognition. The revenue from grant awards is based upon subcontractor costs and internal costs incurred that are specifically covered by each grant, and where applicable, plus a facilities and administrative rate that provides funding for overhead expenses. These revenues are recognized when expenses have been incurred by subcontractors

or when we incur internal expenses that are related to the grant. Any amounts received prior to satisfying our revenue recognition criteria are recorded as deferred revenue.

Revenues from sales and services are generated from the sale of customized reagents and providing contract development services. Reagents are used for preparing ADCs, these reagents include industrial standard cytotoxins, linkers, and linker-toxins. The contract development services include providing synthetic expertise to customer's synthesis by delivering them proprietary cytotoxins, linkers and linker-toxins and ADC service using industry standard toxin and antibodies provided by customers. Revenue is recognized when (i) persuasive evidence of an arrangement exists, (ii) the product has been shipped or the services have been rendered, (iii) the price is fixed or determinable, and (iv) collectability is reasonably assured.

Investments in Other Entities. We hold a portfolio of investments in equity securities that are accounted for under either the equity method or cost method. Investments in entities over which we have significant influence but not a controlling interest are accounted for using the equity method, with our share of earnings or losses reported in loss on equity investments.

Our cost method investments are included in investments in common stock on the consolidated balance sheets. Our equity method investments are included in equity method investments on the consolidated balance sheets.

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: the magnitude of the impairment and length of time that the market value was below the 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; any other information that we may be aware of related to the investment. We do not report the fair value of our equity investments in non-publicly traded companies because it is not practical to do so

Income Taxes. The provisions of the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 740-10, Uncertainty in Income Taxes, address the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under ASC Topic 740-10, we may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. We have determined that we have uncertain tax positions.

We account for income taxes using the asset and liability method to compute the differences between the tax basis of assets and liabilities and the related financial amounts, using currently enacted tax rates.

We have deferred tax assets, which are subject to periodic recoverability assessments. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount that more likely than not will be realized. As of December 31, 2016, we maintained a full valuation allowance against our deferred tax assets, with the exception of an amount equal to our deferred tax liabilities, which can be expected to reverse over a definite life.

Acquisitions and Intangibles. We have engaged in business combination activity. The accounting for business combinations requires management to make judgments and estimates of the fair value of assets acquired, including the identification and valuation of intangible assets, as well as liabilities assumed. Such judgments and estimates directly impact the amount of goodwill recognized in connection with each acquisition, as goodwill presents the excess of the purchase price of an acquired business over the fair value of its net tangible and identifiable intangible assets.

Acquired In-Process Research and Development Expense. We have acquired and may continue to acquire the rights to develop and commercialize new drug candidates. The up-front payments to acquire a new drug compound, as well as future milestone payments, may be immediately expensed as acquired in-process research and development provided that the drug has not achieved regulatory approval for marketing and, absent obtaining such approval, have no alternative future use. Prior to November 8, 2016, all acquired IPR&D was expensed immediately. The acquired in-process research and development related to the business combination of Scilex Pharmaceuticals Inc. (“Scilex”) for which certain products are under development and expected to be commercialized in the near future was capitalized and recorded within “Intangibles, net” on the accompanying consolidated balance sheet. Capitalized IPR&D will be reviewed annually for impairment or more frequently as changes in circumstance or the occurrence of events suggest that the remaining value may not be recoverable.

Acquisition Consideration Payable - Gain on Contingent Liabilities. Acquisition consideration payable relates to the our acquisition of businesses and various other assets and is recorded on our consolidated balance sheets at fair value and is re-measured at each balance sheet date until such contingent liabilities have been settled, with changes in fair value recorded as gain on contingent liabilities. We estimate the fair value of contingent consideration based on level 3 inputs primarily driven by the probability of achieving certain financing or operating related milestones.

Contractual Obligations

As of December 31, 2016, our contractual obligations are as follows (in thousands):

	Payments Due by Fiscal Year					
	2017	2018	2019	2020	Thereafter	Total
Long-term debt	$4,811	$13,675	$22,548	$25,411	$—	$66,445
Operating leases	4,763	4,944	4,795	4,909	27,549	46,960
Total financial obligations	$9,574	$18,619	$27,343	$30,320	$27,549	$113,405

Off-Balance Sheet Arrangements

From our inception through December 31, 2016, we did not engage in any off-balance sheet arrangements, as defined in Item 303(a)(4) of Regulation S-K.

Recent Accounting Pronouncements

Refer to Note 3, “Nature of Operations and Summary of Significant Accounting Polices,” in the accompanying notes to the consolidated financial statements for a discussion of recent accounting pronouncements.

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

Interest Rate Risk. Our exposure to market risk is confined to our cash and cash equivalents. We have cash and cash equivalents and invest primarily in high-quality money market funds, which we believe are subject to limited credit risk. Due to the low risk profile of our investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio. The interest rate under our loan and security agreement with Hercules Capital, Inc. is calculated at a prime-based variable rate, currently at 9.75%. We do not believe that we have any material exposure to interest rate risk arising from our investments.

Capital Market Risk. We currently do not have significant revenues from grants or sales and services and we have no product revenues from our planned principal operations and therefore depend on funds raised through other sources. One source of funding is through future debt or equity offerings. Our ability to raise funds in this manner depends upon, among other things, capital market forces affecting our stock price.

Item 8. Financial Statements and Supplementary Data.

Our consolidated financial statements and supplementary data required by this item are set forth at the pages indicated in Item 15(a)(1) and (a)(2), respectively, of this Form 10-K.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports filed under the Securities Exchange Act of 1934, as amended(the “Exchange Act”), is recorded, processed, summarized and reported within the time periods specified in the SEC’s regulations, rules and forms and that such information is accumulated and communicated to our management, including our chief executive officer and principal financial and accounting officer, as appropriate, to allow for timely decisions regarding required disclosure.

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. As required by Rule 13a-15(b) promulgated by the SEC under the Exchange Act, we carried out an evaluation, under the supervision and with the participation of our management, including our chief executive officer and principal financial and accounting officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Form 10-K. Based on the foregoing, our chief executive officer and principal financial and accounting officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Form 10-K as a result of the weakness described below.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for our company. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) promulgated under the Exchange Act, as a process designed by, or under the supervision of, a company's principal chief executive officer and principal financial and accounting officer and effected by the Company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP and includes those policies and procedures that:

(1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
(2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures of the company are being made in accordance with authorizations of management and directors of the company; and
(3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible enhancements to controls and procedures.

We conducted an evaluation of the effectiveness of internal control over financial reporting based on the framework in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In March 2017, in connection with the preparation of our 2016 financial statements, we identified certain purchase agreements which contained terms for contingent consideration that were not identified timely and accounted for in our historical financial statements on a timely basis. Further, certain other purchase agreements containing terms for contingent consideration were identified timely, but we failed to adjust the liabilities for changes in fair value at each subsequent reporting period. Accordingly, we did not appropriately account for liabilities for contingent consideration payable and the related adjustments to earnings.

Based on these findings and the criteria discussed above, our management identified a material weakness in its review controls over unusual or non-recurring and significant transactions. Specifically, the Company's controls were not properly designed to provide reasonable assurance that it (1) timely identifies and assesses the accounting implications

of terms in unusual or non-recurring agreements and (2) reassesses the valuation of associated assets or liabilities at the end of each reporting period. Accordingly, our principal executive officer and principal financial officer concluded that, at December 31, 2016, our internal control over financial reporting was not effective at the reasonable assurance level.

The material weakness did not result in a restatement of previously issued annual consolidated financial statements, but it did result in an immaterial restatement of the Company's quarterly financial information included in Note 19 of the Consolidated Financial Statements incorporated in this Form 10-K. Notwithstanding the material weakness in our internal control over financial reporting, based on the additional analyses and procedures performed, we believe the consolidated financial statements and other financial information included in our Annual Report on Form 10-K, are fairly presented in all material respects, in conformity with accounting principles generally accepted in the United States of America.

The effectiveness of our internal control over financial reporting at December 31, 2016 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Remediation Efforts to Address the Material Weakness

As a result of the material weakness, we have initiated and will continue to implement remediation measures including, but not limited to, improving centralized documentation control, improving the internal communication procedures between senior executive management, accounting personnel, and related business owners, leveraging external accounting experts as appropriate, and strengthening policies and procedures related to the transferring of responsibilities and the handoff of personnel duties. We believe that our remediation measures will ensure that the Company timely identifies terms in agreements that could have material accounting implications, assesses the accounting and disclosures implications of the terms, and accounts for such items in the financial statements appropriately. Any failure to implement these improvements to internal controls over financial reporting may render our future assertions as ineffective and potentially impact our ability to produce reliable financial reports, effectively manage the company, prevent fraud, and could potentially harm our business and our performance.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during the quarter ended December 31, 2016 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. As identified above under “Management’s Annual Report on Internal Control Over Financial Reporting,” a material weakness was identified in our internal control over financial reporting as of December 31, 2016. Our plans for remediating such material weakness, which would constitute changes in our internal control over financial reporting prospectively, are also enumerated above.

Item 9B. Other Information.

On March 15, 2017, we, the other Borrowers and Hercules entered into an amendment to the Loan Agreement (the “Amendment”). The Amendment: (1) adjusted the minimum amount of unrestricted cash that we must maintain, (2) changed the date by which we must achieve a fundraising milestone, (3) modified the second and third tranches of additional funds available under the Term Loan such that $25.0 million is available until June 30, 2018, subject to approval by Hercules’ Investment Committee, and (4) amended the end of term charge.

On March 17, 2017, we, the members of the Prior Board and WLA entered into a confidential settlement agreement and release (the “Settlement Agreement”) pursuant to which, among other things, each party agreed to forever release and not to sue the other party with respect to the claims asserted in the Actions and WLA agreed to dismiss the Actions within ten business days following the execution of the Settlement Agreement. We also agreed (1) to terminate all options and warrants currently outstanding in our subsidiaries that have been granted to Dr. Ji and any of our other directors, (2) to grant WLA the right to designate a representative to attend all meetings of our board of directors in a nonvoting observer capacity, and (3) to act in good faith to attempt to add two additional independent directors to our board of directors. In addition, WLA agreed to comply with a two-year standstill period, during which WLA is prohibited from engaging in certain actions relating to controlling or influencing our management.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K since we intend to file our definitive Proxy Statement for our next Annual Meeting of Stockholders, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended (the “2017 Proxy Statement”), no later than April 30, 2017, and certain information to be included in the 2017 Proxy Statement is incorporated herein by reference. To the extent that we do not file the

2017 Proxy Statement by April 30, 2017, we will file an amendment to this Annual Report on Form 10-K that includes the information required by Part III.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item regarding our directors, executive officers and corporate governance will be included in our 2017 Proxy Statement and is incorporated herein by reference.

Item 11. Executive Compensation.

The information required by this item regarding executive compensation will be included in our 2017 Proxy Statement 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 regarding security ownership of certain beneficial owners and management will be included in our 2017 Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.
The information required by this item regarding certain relationships and related transactions and director independence will be included in our 2017 Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.
The information required by this item regarding principal accounting fees and services will be included in our 2017 Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.
(a)(1) Financial Statements

Reference is made to the Index to Consolidated Financial Statements of Sorrento Therapeutics, Inc. appearing on page F-1 of this Form 10-K.

(a)(2) Financial Statement Schedules

Schedule II – Valuation of Qualifying Accounts

All other schedules not listed above have been omitted because of the absence of conditions under which they are required, or because the required information is included in the consolidated financial statements or the notes thereto.

(a)(3) Exhibits

Exhibit No.	Description
2.1*	Agreement and Plan of Merger between Sorrento Therapeutics, Inc. and IgDraSol, Inc. dated September 9, 2013 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 11, 2013).
2.2*	Agreement of Merger by and among Sorrento Therapeutics, Inc., Catalyst Merger Sub, Inc., Concortis Biosystems, Corp., Zhenwei Miao and Gang Chen dated as of November 11, 2013 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 14, 2013).
2.3*	Stock Purchase Agreement, dated November 8, 2016, by and among Sorrento Therapeutics, Inc., Scilex Pharmaceuticals Inc., the stockholders of Scilex Pharmaceuticals Inc. party thereto and SPI Shareholders Representative, LLC, as representative of the stockholders of Scilex Pharmaceuticals Inc. party thereto (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 8, 2016).
3.1	Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on May 15, 2013).
3.2	Certificate of Amendment of the Restated Certificate of Incorporation of Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on August 1, 2013).
3.3	Bylaws (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the SEC on October 23, 2009).
3.4	Certificate of Designation of Rights, Preferences and Privileges of Series A Junior Participating Preferred Stock of Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 12, 2013).
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on October 23, 2009).
4.2	Form of Convertible Promissory Note (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on October 21, 2013).
4.3	Amended and Restated Rights Agreement, dated as of December 21, 2015 by and between Sorrento Therapeutics, Inc. and Philadelphia Stock Transfer, Inc., as rights agent (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 21, 2015).
4.4	Common Stock Purchase Warrant issued to Cambridge Equities, LP. (incorporated by reference to Exhibit 4.4 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 16, 2015).

4.5 Securities Purchase Agreement, dated as of April 3, 2016, by and among Sorrento Therapeutics, Inc., ABG SRNE Limited and Ally Bridge LB Healthcare Master Fund Limited (incorporated by reference to Exhibit 4.5 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).

4.6 Securities Purchase Agreement, dated as of April 3, 2016, by and between Sorrento Therapeutics, Inc. and FREJOY Investment Management Co., Ltd. (incorporated by reference to Exhibit 4.6 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).

4.7 Securities Purchase Agreement, dated as of April 3, 2016, by and between Sorrento Therapeutics, Inc. and Beijing Shijilongxin Investment Co., Ltd. (incorporated by reference to Exhibit 4.7 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).

4.8 Securities Purchase Agreement, dated as of April 3, 2016, by and between Sorrento Therapeutics, Inc. and Yuhan Corporation (incorporated by reference to Exhibit 4.8 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).

4.9 Form of Common Stock Purchase Warrant issued to investors pursuant to the Securities Purchase Agreement, dated as of April 3, 2016, by and among Sorrento Therapeutics, Inc., ABG SRNE Limited and Ally Bridge LB Healthcare Master Fund Limited (incorporated by reference to Exhibit 4.9 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).

Exhibit No.	Description
4.10	Form of Common Stock Purchase Warrant issued to investors pursuant to the Securities Purchase Agreement, dated as of April 3, 2016, by and between Sorrento Therapeutics, Inc. and FREJOY Investment Management Co., Ltd. and Securities Purchase Agreement, dated as of April 3, 2016, by and between Sorrento Therapeutics, Inc. and Beijing Shijilongxin Investment Co., Ltd. (incorporated by reference to Exhibit 4.10 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).
4.11	Common Stock Purchase Warrant issued to Yuhan Corporation on April 29, 2016 (incorporated by reference to Exhibit 4.11 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).
4.12	Voting Agreement, dated as of April 29, 2016, by and between Sorrento Therapeutics, Inc. and Yuhan Corporation (incorporated by reference to Exhibit 4.12 to the Registrant's Registration Statement on Form S-3 filed with the SEC on June 29, 2016).
4.13	Registration Rights Agreement, dated November 8, 2016, by and among Sorrento Therapeutics, Inc. and the persons party thereto (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 8, 2016).
4.14	Warrant Agreement, dated November 23, 2016, issued to Hercules Capital, Inc. (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 29, 2016).
10.1+	Exclusive License and Development Agreement between Sorrento Therapeutics, Inc. and China Oncology Focus Limited dated October 3, 2014 (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q/A filed with the SEC on November 25, 2014).
10.2+	License Agreement, dated January 8, 2010, by and between The Scripps Research Institute and Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on May 14, 2010).
10.3±	Form of Stock Option Agreement (incorporated by reference to Exhibit 10.11 to the Registrant's Current Report on Form 8-K/A filed with the SEC on September 22, 2009).
10.4±	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 7, 2012).
10.5±	2009 Amended and Restated Stock Incentive Plan, and forms of agreements related thereto (incorporated by reference to Appendix A to the definitive proxy statement filed by Sorrento Therapeutics, Inc. with the Securities and Exchange Commission on May 13, 2016).
10.6±	2009 Equity Incentive Plan, and forms of agreement related thereto (incorporated by reference to Exhibit 10.17 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 25, 2010).
10.7±	Employment Agreement, dated September 21, 2012, by and between Sorrento Therapeutics, Inc. and Henry Ji, Ph.D. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2012).
10.8±	

First Amendment to Employment Agreement dated October 18, 2012, by and between Sorrento Therapeutics, Inc. and Henry Ji, Ph.D. (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2012).

10.9± Independent Director Compensation Policy (incorporated by reference to Exhibit 10.28 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 25, 2013).

10.10 Option Agreement between Sorrento Therapeutics, Inc. and B.G, Negev Technologies and Applications Ltd. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 13, 2013).

10.11* Lease dated as of February 3, 2015 by and between HCP University Center West LLC and Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 10.30 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 16, 2015).

Exhibit No.	Description
10.12+	Exclusive License Agreement dated as of April 21, 2015 by and between NantCell, Inc. and Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2015).
10.13*	Stock Sale and Purchase Agreement dated as of May 14, 2015 by and between NantPharma, LLC and Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 7, 2015).
10.14*	Membership Interest Purchase Agreement by and among TNK Therapeutics, Inc., CARgenix Holdings LLC, the Members of CARgenix Holdings LLC, Jaymin Patel as the Members Representative and Sorrento Therapeutics, Inc. dated as of August 7, 2015 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 16, 2015).
10.15	Amendment No. 1 to Membership Interest Purchase Agreement, dated as of March 7, 2016, by and between TNK Therapeutics, Inc. and Jaymin Patel, as the Members' Representative (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2016).
10.16*	Stock Purchase Agreement by and among TNK Therapeutics, Inc., BDL Products, Inc., the Stockholders of BDL Products, Inc., Richard Junghans, M.D., Ph.D. as the Stockholders' Representative and Sorrento Therapeutics, Inc. dated as of August 7, 2015 (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 16, 2015).
10.17	Amendment No. 1 to Stock Purchase Agreement, dated as of March 7, 2016, by and between TNK Therapeutics, Inc. and Richard P. Junghans, M.D., Ph.D., as the Stockholders' Representative (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2016).
10.18	Binding Term Sheet with NanoVelcro Circulating Tumor Cell (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 16, 2015).
10.19+	Exclusive License Agreement dated September 25, 2015 by and between LA Cell, Inc. and City of Hope (incorporated by reference to Exhibit 10.26 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 15, 2016).
10.20±	Employment Agreement, dated December 8, 2014, by and between Sorrento Therapeutics, Inc. and George Ng (incorporated by reference to Exhibit 10.28 to the Registrant's Annual Report on Form 10-K/A filed with the SEC on April 29, 2016).
10.21±	Employment Agreement, dated October 16, 2015, by and between Sorrento Therapeutics, Inc. and Jeffrey Su (incorporated by reference to Exhibit 10.29 to the Registrant's Annual Report on Form 10-K/A filed with the SEC on April 29, 2016).
10.22±	Employment Agreement between Sorrento Therapeutics, Inc. and Kevin M. Herde dated as of April 5, 2016 (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on May 10, 2016).
10.23	

Letter Agreement, dated June 30, 2016, among Chan Soon-Shiong Family Foundation, Cambridge Equities, L.P. and Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 8, 2016).

10.24+ License and Collaboration Agreement, dated July 6, 2016, among Les Laboratoires Servier, SAS, Institut de Recherches Internationales Servier and Sorrento Therapeutics, Inc. (incorporated by reference to Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q/A filed with the SEC on January 17, 2017).

10.25 Binding Term Sheet, dated August 15, 2016, among Sorrento Therapeutics, Inc., Scintilla Pharmaceuticals, Inc. and Semnur Pharmaceuticals, Inc. (incorporated by reference to Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2016).

10.26 Lease Agreement, dated September 12, 2016, between Sorrento Therapeutics, Inc. and HCP Life Science REIT, Inc. (incorporated by reference to Exhibit 10.4 to the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 9, 2016).

Exhibit No.	Description
10.27	Unit Purchase Agreement dated August 5, 2016, by and among MedoveX Corporation and the purchasers party thereto (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by MedoveX Corporation (File No. 001-36763) with the SEC on August 8, 2016).
10.28	Registration Rights Agreement, dated August 5, 2016, by and among MedoveX Corporation and the investors party thereto (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed by MedoveX Corporation (File No. 001-36763) with the SEC on August 8, 2016).
10.29	Promissory Note, dated November 1, 2016, issued by Celularity, Inc. to Sorrento Therapeutics, Inc.
10.30	Binding Term Sheet, dated November 15, 2016, among Sorrento Therapeutics, Inc., TNK Therapeutics, Inc., and Virttu Biologics Limited.
10.31**	Loan and Security Agreement, dated November 23, 2016, among Sorrento Therapeutics, Inc., certain of its domestic subsidiaries, and Hercules Capital, Inc.
10.32**	First Amendment to Loan and Security Agreement, dated December 27, 2016, among Sorrento Therapeutics, Inc., certain of its domestic subsidiaries, and Hercules Capital, Inc.
10.33	Amendment No. 2 to Stock Purchase Agreement, dated as of September 14, 2016, by and between TNK Therapeutics, Inc. and Richard P. Junghans, M.D., Ph.D., as the Stockholders' Representative.
10.34**	Second Amendment to Loan and Security Agreement, dated March 2, 2017, among Sorrento Therapeutics, Inc., certain of its domestic subsidiaries, and Hercules Capital, Inc.
10.35**	Third Amendment to Loan and Security Agreement, dated March 15, 2017, among Sorrento Therapeutics, Inc., certain of its domestic subsidiaries, and Hercules Capital, Inc.
21.1	List of Subsidiaries
23.1	Consent of Deloitte & Touche LLP
23.2	Consent of Mayer Hoffman McCann P.C.
24	Power of Attorney (included on signature page hereto)
31.1	Certification of Henry Ji, Ph.D., Principal Executive Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, as amended.
31.2	Certification of Kevin Herde, Chief Financial Officer, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, as amended.
32.1	Certification of Henry Ji, Ph.D., Principal Executive Officer and Kevin Herde, Chief Financial Officer, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, as amended.

101.INS XBRL Instance Document

101.SCH XBRL Taxonomy Extension Schema Document

101.CAL XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF XBRL Taxonomy Extension Definition Linkbase Document

101.LAB XBRL Taxonomy Extension Label Linkbase Document

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

* Non-material schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Registrant hereby undertakes to furnish supplementally copies of any of the omitted schedules and exhibits upon request by the SEC.
** Portions of this exhibit have been omitted and filed separately with the SEC pursuant to a request for confidential treatment.
+ The SEC has granted confidential treatment with respect to certain portions of this exhibit. Omitted portions have been filed separately with the SEC.
± Management contract or compensatory plan.

The following financial statement schedule is filed as part of this Annual Report on Form 10-K:

Schedule Number	Description
II	Valuation and Qualifying Accounts

SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS

(in thousands)	Balance at Beginning of Period	Reserves Acquired	Additions	Deductions	Balance at End of Period
Fiscal Year 2016:					
Income tax valuation allowance	39,605	—	41,434	—	81,039
	$ 39,605	$ —	$ 41,434	$ —	$ 81,039
Fiscal Year 2015:					
Income tax valuation allowance	25,350	—	14,255	—	39,605
	$ 25,350	$ —	$ 14,255	$ —	$ 39,605
Fiscal Year 2014:					
Income tax valuation allowance	12,299	—	13,051	—	25,350
	$ 12,299	$ —	$ 13,051	$ —	$ 25,350

Item 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: March 21, 2017 SORRENTO THERAPEUTICS, INC.

By: /s/ HENRY JI
Director, Chief Executive Officer

& President

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints, jointly and severally, Henry Ji, Ph.D., and George Ng, and each of them acting individually, as his attorney-in-fact, each with full power of substitution and resubstitution, for him 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 exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact 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 might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title(s)	Date
/s/ HENRY JI Henry Ji, Ph.D.	Director, Chief Executive Officer & President (Principal Executive Officer)	March 21, 2017
/s/ Kevin Herde Kevin Herde	Chief Financial Officer (Principal Financial and Accounting Officer)	March 21, 2017
/s/ WILLIAM S. MARTH William S. Marth, Ph.D.	Director	March 21, 2017
/s/ Yue Alexander Wu Yue Alexander Wu, Ph.D.	Director	March 21, 2017

/s/ KIM D. JANDA Kim D. Janda, Ph.D.	Director	March 21, 2017
/s/ David Deming David Deming	Director	March 21, 2017
/s/ JAISIM SHAH Jaisim Shah	Director	March 21, 2017

Sorrento Therapeutics, Inc.

Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of

Sorrento Therapeutics, Inc. and Subsidiaries

San Diego, California

We have audited the accompanying consolidated balance sheets of Sorrento Therapeutics, Inc. and Subsidiaries (the "Company") as of December 31, 2015 and 2014, and the related consolidated statements of operations, stockholders' equity, and cash flows for the years ended December 31, 2015 and 2014. These consolidated 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 audits.

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

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Sorrento Therapeutics, Inc. and Subsidiaries as of December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the years ended December 31, 2015 and 2014, in conformity with accounting principles generally accepted in the United States of America.

/s/ Mayer Hoffman McCann P.C.

San Diego, CA

March 14, 2016

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of

Sorrento Therapeutics, Inc. and Subsidiaries

San Diego, California

We have audited the accompanying consolidated balance sheet of Sorrento Therapeutics, Inc. and subsidiaries (the "Company") as of December 31, 2016, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for the year then ended. Our audit also included the financial statement schedule listed in the Index at Item 15. These consolidated financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the consolidated financial statements and financial statement schedule 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. 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, such consolidated financial statements present fairly, in all material respects, the financial position of Sorrento Therapeutics, Inc. and subsidiaries as of December 31, 2016, and the results of their operations and their cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

The accompanying consolidated financial statements for the year ended December 31, 2016, have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company's recurring losses from operations and availability of working capital raise substantial doubt about its ability to continue as a going concern. Management's plans concerning these matters are also discussed in Note 2 to the consolidated financial statements. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2016, based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 21, 2017 expressed an adverse opinion on the Company's internal control over financial reporting because of a material weakness.

DELOITTE & TOUCHE LLP

San Diego, California

March 21, 2017

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of

Sorrento Therapeutics, Inc. and Subsidiaries

San Diego, California

We have audited Sorrento Therapeutics, Inc. and subsidiaries' (the "Company's") internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on that risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial

statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment: The Company's review controls over unusual or non-recurring and significant transactions were not properly designed to provide reasonable assurance that it (1) timely identifies and assesses the accounting implications of terms in unusual or non-recurring agreements and (2) reassesses the valuation of associated assets or liabilities at the end of each reporting period. This material weakness was considered in determining the nature, timing, and extent of audit tests applied in our audit of the consolidated financial statements and financial statement schedule as of and for the year ended December 31, 2016, of the Company and this report does not affect our report on such financial statements and financial statement schedule.

In our opinion, because of the effect of the material weakness identified above on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2016, based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements and financial statement schedule as of and for the year ended December 31, 2016, of the Company and our report dated March 21, 2017 expressed an unqualified opinion on those consolidated financial statements and financial statement schedule and included an explanatory paragraph regarding substantial doubt about the Company's ability to continue as a going concern.

DELOITTE & TOUCHE LLP

San Diego, California

March 21, 2017

SORRENTO THERAPEUTICS, INC.

CONSOLIDATED BALANCE SHEETS

(In thousands, except for share amounts)

	December 31, 2016	2015
ASSETS		
Current assets:		
Cash and cash equivalents	$82,398	$39,038
Marketable securities	1,106	97,366
Grants and accounts receivables, net	1,696	903
Income tax receivable	1,289	1,715
Prepaid expenses and other, net	3,165	1,996
Total current assets	89,654	141,018
Property and equipment, net	12,707	7,246
Intangibles, net	64,766	3,912
Goodwill	41,548	20,626
Investments in common stock	112,008	112,008
Equity method investments	76,994	58,119
Other, net	3,909	590
Total assets	$401,586	$343,519
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$8,282	$1,339
Accrued payroll and related	3,565	2,361
Current portion of deferred compensation	1,012	891
Accrued expenses	4,741	3,927
Current portion of deferred revenue	9,666	—
Derivative liability	—	5,520
Current portion of deferred rent	248	—
Acquisition consideration payable	48,362	12,000
Current portion of debt	209	4,835
Total current liabilities	76,085	30,873
Long-term debt	47,107	4,394
Deferred compensation	—	12
Deferred tax liabilities	53,238	49,341
Deferred revenue	134,376	110,900
Deferred rent and other	4,278	7,061
Total liabilities	315,084	202,581
Commitments and contingencies		
Equity:		
Sorrento Therapeutics, Inc. equity		
Preferred stock, $0.0001 par value; 100,000,000 shares authorized and no shares	—	—

issued or outstanding		
Common stock, $0.0001 par value; 750,000,000 shares authorized and 50,882,856 and 37,771,459 shares issued and outstanding at December 31, 2016 and 2015, respectively	6	4
Additional paid-in capital	303,865	184,898
Accumulated other comprehensive income	(118)	73,579
Accumulated deficit	(174,252)	(113,329)
Treasury stock, 7,568,182 shares and no shares at cost at December 31, 2016, and 2015, respectively	(49,464)	—
Total Sorrento Therapeutics, Inc. stockholders' equity	80,037	145,152
Noncontrolling interests	6,465	(4,214)
Total equity	86,502	140,938
Total liabilities and equity	$401,586	$343,519

See accompanying notes

SORRENTO THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

For the Years Ended December 31, 2016, 2015 and 2014

(In thousands, except for per share amounts)

	2016	2015	2014
Revenues:			
Grant	$1,033	$1,530	$488
Royalties and licenses	4,017	—	—
Sales and services	3,102	3,060	3,337
Total revenues	8,152	4,590	3,825
Operating costs and expenses:			
Costs of revenues	811	1,950	2,043
Research and development	42,175	31,343	23,983
Acquired in-process research and development	45,000	24,013	209
General and administrative	24,219	20,132	9,987
Intangible amortization	845	1,157	2,345
(Gain) loss on contingent liabilities	(8,121)	—	—
Total costs and operating expenses	104,929	78,595	38,567
Loss from operations	(96,777)	(74,005)	(34,742)
Gain on sale of IgDraSol, net	—	69,274	—
Gain (loss) on derivative liabilities	5,520	(3,360)	—
Gain on marketable securities	27,193	—	—
Gain on trading securities	356	—	—
Gain (loss) on equity investments	435	(4,041)	—
Interest expense	(1,610)	(1,652)	(1,629)
Interest income	272	24	12
Loss on debt extinguishment	(222)	—	—
Loss before income tax expense	(64,833)	(13,760)	(36,359)
Income tax expense (benefit)	(896)	36,314	(1,702)
Net loss	(63,937)	(50,074)	(34,657)
Net loss attributable to noncontrolling interests	(3,014)	(4,263)	—
Net loss attributable to Sorrento	$ (60,923)	$(45,811)	$(34,657)
Net loss per share - basic and diluted per share attributable to Sorrento	$(1.21)	$(1.24)	$(1.30)
Weighted-average shares used during period - basic and diluted per share attributable to Sorrento	50,360	36,909	26,679

See accompanying notes

SORRENTO THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

For the Years Ended December 31, 2016, 2015 and 2014

(In thousands, except for share amounts)

	2016	2015	2014
Net loss attributable to Sorrento	$(60,923)	$(45,811)	$(34,657)
Other comprehensive income:			
Unrealized (loss) gain on marketable securities, net of tax of $(14,294), $14,294, and $0	(73,579)	73,579	—
Foreign currency translations adjustments and other	(118)	—	—
Total other comprehensive income	(73,697)	73,579	—
Comprehensive (loss) income attributable to Sorrento	(134,620)	27,768	(34,657)
Comprehensive income (loss) attributable to noncontrolling interests	—	—	—
Comprehensive (loss) income	$(134,620)	$27,768	$(34,657)

See accompanying notes

SORRENTO THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

For the Years Ended December 31, 2016, 2015 and 2014

(In thousands, except for share amounts)

	Common Stock		Treasury Stock		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	Noncontrolling	
	Shares	Amount	Shares	Amount	Capital	Income (Loss)	Deficit	Interest	Total
Balance, December 31, 2013	23,028,100	2	—	—	99,668	—	(32,861)	—	66,809
Issuance of common stock for research agreement	25,000	—	—	—	209	—	—	—	209
Issuance of common stock with exercise of options	64,000	—	—	—	304	—	—	—	304
Issuance of common stock warrants in connection with amended loan and security agreement	—	—	—	—	322	—	—	—	322
Issuance of common stock for cash at $5.25 per share, net of issuance costs of $2,126	5,479,750	1	—	—	26,642	—	—	—	26,643
	400,000	—	—	—	3,420	—	—	—	3,420

Issuance of common stock for cash at $9.00 per share, net of issuance costs of $180									
Issuance of common stock warrants for cash at $5.80 per share, net of issuance costs of $20	7,188,062	1	—	—	41,722	—	—	—	41,723
Stock-based compensation	—	—	—	—	3,940	—	—	—	3,940
Net loss	—	—	—	—	—	—	(34,657)	—	(34,657)
Balance, December 31, 2014	36,184,912	4	—	—	176,227	—	(67,518)	—	108,713
Issuance of common stock with exercise of warrants	3,563	—	—	—	—	—	—	—	—
Issuance of common stock with exercise of options	276,712	—	—	—	1,699	—	—	—	1,699
Issuance of common stock upon achievement of milestone	1,306,272	—	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	6,972	—	—	—	6,972
Change in unrealized gain on marketable securities	—	—	—	—	—	73,579	—	—	73,579
Sale of noncontrolling interest	—	—	—	—	—	—	—	49	49
Net loss	—	—	—	—	—	—	(45,811)	(4,263)	(50,074)
	37,771,459	4	—	—	184,898	73,579	(113,329)	(4,214)	140,938

Balance, December 31, 2015									
Issuance of common stock with exercise of options	204,668	—	—	—	524	—	—	—	527
Issuance of common stock for private placement and investments, net	27,598,235	3	—	—	108,298	—	—	—	108,301
Issuance of common stock upon acquisition of Scilex	754,911	1	—	—	5,368	—	—	13,693	19,061
Cancellation of stock issuance	(15,446,417)	(2)	7,568,182	(49,464)	(1,341)	—	—	—	(50,807)
Stock-based compensation	—	—	—	—	4,741	—	—	—	4,741
Change in unrealized gain on marketable securities	—	—	—	—	—	(73,579)	—	—	(73,579)
Foreign currency translation adjustment	—	—	—	—	—	(118)	—	—	(118)
Hercules warrant	—	—	—	—	1,377	—	—	—	1,377
Net loss	—	—	—	—	—	—	(60,923)	(3,014)	(63,937)
Balance, December 31, 2016	50,882,856	$6	7,568,182	(49,464)	$303,865	$(118)	$(174,252)	$6,465	$86,502

See accompanying notes

SORRENTO THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

For the Years Ended December 31, 2016, 2015 and 2014

(In thousands, except for share amounts)

	2016	2015	2014
Operating activities			
Net loss	$(63,937)	$(50,074)	$(34,657)
Adjustments to reconcile net loss to net cash provided by and (used in) operating activities:			
Depreciation and amortization	2,885	2,370	3,184
Non-cash interest expense	164	392	451
Gain on sale of IgDraSol	—	(69,274)	—
Gain on sale of marketable securities	(27,193)	—	—
Stock-based compensation	4,741	6,972	3,940
Acquired in-process research and development	—	12,000	209
Provision for doubtful accounts	—	5	33
Gain or loss on derivative liability	(5,520)	3,360	—
Gain or loss on equity investments	(435)	4,041	—
Gain on contingent liabilities	(8,121)	—	—
Deferred tax provision	982	33,337	(1,702)
Changes in operating assets and liabilities; net of dispositions:			
Grants and other receivables	(472)	(176)	(371)
Prepaid expenses and other	38	(1,052)	(979)
Deposits and other assets	(448)	(1,715)	—
Accounts payable	3,714	(2,713)	(497)
Deferred revenue	23,534	9,876	—
Deferred rent and other	(2,535)	—	—
Accrued expenses and other liabilities	1,711	10,582	1,625
Net cash used for operating activities	(70,892)	(42,069)	(28,764)
Investing activities			
Purchases of property and equipment	(6,860)	(3,707)	(591)
Proceeds from sale of IgDraSol	—	27,759	—
Investment in SiniWest	(1,000)	—	—
Investment in Cellularity	(5,000)	—	—
Purchase of business, net of cash acquired	(3,842)	—	—
Purchase of MedoveX Investment	(750)	—	—
Investments in common stock	—	(11,500)	(10,000)
Net cash (used in) provided by investing activities	(17,452)	12,552	(10,591)
Financing activities			
Net borrowings under loan and security agreement	—	—	7,500
Proceeds from issuance of common stock, net	107,986	—	71,786

Cash payments for treasury shares	(15,639)	—	—
Proceeds from loan and security agreement, net of fees	48,320	(3,095)	—
Payments of debt principal on retired note	(9,451)	—	—
Net payments of deferred compensation	—	(2,000)	—
Sale of a noncontrolling interest	—	49	—
Proceeds from exercise of stock options	524	1,699	304
Net cash provided by (used in) financing activities	131,740	(3,347)	79,590
Net change in cash and cash equivalents	43,396	(32,864)	40,235
Net effect of exchange rate changes on cash	—	—	—
Cash and cash equivalents at beginning of period	39,038	71,902	31,667
Cash and cash equivalents at end of period	$82,398	$39,038	$71,902
Supplemental disclosures:			
Cash paid during the period for:			
Income taxes	$2	$3,001	$6
Interest paid	$1,342	$1,574	$1,544
Supplemental disclosures of non-cash investing and financing activities:			
Purchase of intangible assets of Scilex	$(82,531)	$—	$—
Gain on marketable securities	$78,358	$—	$—
Investment in ImmuneOncia	$(9,608)	$—	$—
Stock subscribed	$612	$—	$—
Common stock received in exchange for license	$—	$(100,000)	$—
Contributions to equity method investments made on Company's behalf	$—	$(60,000)	$—

Property and equipment costs incurred but not paid	$—	$2,396	$—

See accompanying notes

SORRENTO THERAPEUTICS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Operations and Business Activities

Nature of Operations and Basis of Presentation

Sorrento Therapeutics, Inc. (NASDAQ: SRNE), together with its subsidiaries (collectively, the "Company") is a clinical stage biotechnology company focused on delivering clinically meaningful therapies to patients and their families, globally. The Company's primary focus is to transform cancer into a treatable or chronically manageable disease. The Company also has programs assessing the use of its technologies and products in auto-immune, inflammatory, neurodegenerative, infectious diseases and pain indications with high unmet medical needs.

At its core, the Company is an antibody-centric company and leverages its proprietary G-MAB™ library to identify, screen and validate fully human antibodies against high impact oncogenic targets and mutations, immune modulators and intracellular targets. To date, the Company has screened over 100 validated targets and generated a number of fully human antibodies against these targets which are at various stages of preclinical development. These include PD-1, PD-L1, CD38, CD123, CD47, c-MET, VEGFR2, CCR2, OX40, TIGIT and CD137 among others.

The Company's vision is to leverage these antibodies in conjunction with proprietary targeted delivery modalities to generate the next generation of cancer therapeutics. These modalities include proprietary antibody drug conjugates ("ADCs"), bispecific approaches, as well as T-Cell Receptor ("TCR")-like antibodies. With LA Cell, Inc. ("LA Cell"), the Company's joint venture with City of Hope, the Company's objective is to become the global leader in the development of antibodies against intracellular targets such as STAT3, mutant KRAS, MYC, p53 and TAU. Additionally, the Company has acquired and is assessing the regulatory and strategic path forward for its portfolio of late stage biosimilar/biobetter antibodies based on Erbitux®, Remicade®, Xolair®, and Simulect® as these may represent nearer term commercial opportunities.

With each of its programs, the Company aims to tailor its therapies to treat specific stages in the evolution of cancer, from elimination, to equilibrium and escape. In addition, the Company's objective is to focus on tumors that are resistant to current treatments and where the Company can design focused trials based on a genetic signature or biomarker to ensure patients have the best chance of a durable and significant response. The Company has several immuno-oncology programs that are in or near to entering the clinic. These include cellular therapies, an oncolytic virus and a palliative care program targeted to treat intractable cancer pain. Finally, as part of its global aim to provide a wide range of therapeutic products to meet underserved therapeutic markets, the Company has made investments and developed a separate pain focused franchise which the Company believes will serve to provide short term upside to its core thesis.

Through December 31, 2016, the Company had devoted substantially all of its efforts to product development, raising capital and building infrastructure, and had not realized revenues from its planned principal operations.

The accompanying consolidated financial statements include the accounts of the Company's subsidiaries. For consolidated entities where the Company owns or is exposed to less than 100% of the economics, the Company records net income (loss) attributable to noncontrolling interests in its consolidated statements of operations equal to the percentage of the economic or ownership interest retained in such entities by the respective noncontrolling parties. All intercompany balances and transactions have been eliminated in consolidation.

2. Liquidity and Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The Company has incurred substantial net losses and negative operating cash flows for the years ended December 31, 2016, 2015, and 2014 and anticipates that it will continue to do so for the foreseeable future as it continues to identify and invest in advancing product candidates, as well as expanding corporate infrastructure.

As of December 31, 2016, the Company had $50.0 million of long term debt associated with the Loan and Security Agreement, dated November 23, 2016, by and among the Company and certain of its domestic subsidiaries (together with the Company, the "Borrowers") and Hercules Capital, Inc. ("Hercules"), as amended (as so amended, the "Loan Agreement"). The Loan Agreement contains covenants requiring the Company (i) to achieve certain fundraising requirements by certain dates and (ii) to maintain a minimum amount of unrestricted cash prior to achieving the corporate and fundraising milestones. As of December 31, 2016, the Company had $82.4 million of cash and cash equivalents, of which a majority is required to be maintained subject to the minimum

cash requirement of the Loan Agreement. The Company's available cash and financing sources will not be sufficient to meet its current and anticipated cash requirements without additional fundraising. Accordingly, these factors, among others, raise substantial doubt about the Company's ability to continue as a going concern.

The Company has plans in place to obtain sufficient additional fundraising to fulfill its operating and capital requirements for the next 12 months and to maintain compliance with the Loan Agreement covenants. The Company's plans include continuing to fund its operating losses and capital funding needs through public or private equity or debt financings, strategic collaborations, licensing arrangements, asset sales, government grants or other arrangements. Although management believes such plans, if executed as planned, should provide the Company sufficient financing to meet its needs, successful completion of such plans is dependent on factors outside of the Company's control. As such, management cannot be certain that that such plans will be effectively implemented within one year after the date that the financial statements are issued.

To the extent the Company is unable to execute on these plans, or is unable to amend the Loan Agreement to maintain compliance with the Loan Agreement covenants, the Company would be in default under the Loan Agreement and the outstanding loan balance may be declared immediately due and payable. Further, the provisions of the Loan Agreement allows for Hercules to exercise a material adverse event clause should the Company incur a material adverse event within the meaning provided by the Loan Agreement, which could include the going concern matters described herein. Should Hercules invoke the material adverse event clause, the outstanding loan balance may be declared immediately due and payable. Although reasonably possible, the Company believes that it is not probable that the material adverse event clause associated with Loan Agreement will be exercised.

If the Company is unable to raise additional capital in sufficient amounts or on terms acceptable, the Company may have to significantly delay, scale back or discontinue the development or commercialization of one or more of its product candidates. The Company may also seek collaborators for one or more of its current or future product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available.

The consolidated financial statements do not reflect any adjustments that might be necessary if the Company is unable to continue as a going concern.

Universal Shelf Registration

In November 2014, the Company filed a universal shelf registration statement on Form S-3 (the "Shelf Registration Statement") with the SEC, which was declared effective by the SEC in December 2014. This Shelf Registration Statement provides the Company with the ability to offer up to $250 million of securities, including equity and other securities as described in the registration statement. Included in the 2014 shelf registration is a sales agreement prospectus covering the offering, issuance and sale by the Company of up to a maximum aggregate offering price of $50.0 million of the Company's common stock that may be issued and sold under a sales agreement with MLV & Co. LLC. (the "ATM Facility"). During the twelve months ended December 31, 2016 the Company sold approximately $3.6 million in shares of common stock under the ATM Facility. The Company can offer up to $46.4 million of additional shares of common stock under the ATM Facility, subject to certain limitations.

Pursuant to the Shelf Registration Statement, the Company may offer such securities from time to time and through one or more methods of distribution, subject to market conditions and the Company's capital needs. Specific terms and prices will be determined at the time of each offering under a separate prospectus supplement, which will be filed with the SEC at the time of any offering. However, the Company cannot be sure that such additional funds will be available on reasonable terms, or at all.

2016 Private Investment in Public Entity Financing

On April 3, 2016, the Company entered into a Securities Purchase Agreement (the "ABG Purchase Agreement") with ABG SRNE Limited and Ally Bridge LB Healthcare Master Fund Limited (collectively, "Ally Bridge"), pursuant to which, among other things, the Company agreed to issue and sell to Ally Bridge and other purchasers that may be designated by Ally Bridge (collectively, the "ABG Purchasers"), in a private placement transaction (the "ABG Private Placement"), up to $50.0 million in shares of the Company's common stock ("Common Stock") and warrants to purchase shares of Common Stock. Upon the closing of the ABG Private Placement, the Company issued to the ABG Purchasers (1) an aggregate of 9,009,005 shares (the "ABG Shares") of Common Stock, and (2) warrants to purchase an aggregate of 2,702,700 shares of Common Stock (each, an "ABG Warrant"). Each ABG Warrant had an exercise price of $8.50 per share, was immediately exercisable upon issuance, had a term of three years and was exercisable on a cash or cashless exercise basis.

Under the terms of the ABG Purchase Agreement, the Company was obligated to prepare and file with the SEC, within 30 days of the closing date of the ABG Private Placement, a registration statement to register for resale the ABG Shares and the shares of Common Stock issuable upon exercise of each ABG Warrant (the "ABG Warrant Shares"), and may be required to effect certain registrations to register for resale the ABG Shares and the ABG Warrant Shares in connection with certain "piggy-back" registration rights granted to the ABG Purchasers.

On April 3, 2016, the Company also entered into a Securities Purchase Agreement (collectively, the "Additional Purchase Agreements") with each of Beijing Shijilongxin Investment Co., Ltd. ("Beijing Shijilongxin"), FREJOY Investment Management Co., Ltd. ("Frejoy") and Yuhan Corporation ("Yuhan"), pursuant to which, among other things, the Company agreed to issue and sell, in separate private placement transactions: (1) to Beijing Shijilongxin, 8,108,108 shares of Common Stock, and a warrant to purchase 1,176,471 shares of Common Stock, for an aggregate purchase price of $45.0 million; (2) to Frejoy, 8,108,108 shares of Common Stock, and a warrant to purchase 1,176,471 shares of Common Stock, for an aggregate purchase price of $45.0 million; and (3) to Yuhan, 1,801,802 shares of Common Stock, and a warrant to purchase 235,294 shares of Common Stock, for an aggregate purchase price of $10.0 million. The warrants to be issued pursuant to each of the Additional Purchase Agreements (collectively, the "Additional Warrants" and, together with each ABG Warrant, the "Warrants") had an exercise price of $8.50 per share, were immediately exercisable upon issuance, had a term of three years and were exercisable on a cash or cashless exercise basis.

Under the terms of the Additional Purchase Agreements, each of Beijing Shijilongxin, Frejoy and Yuhan had the right to demand, at any time beginning six months after the closing of the transactions contemplated by the applicable Additional Purchase Agreement, that the Company prepare and file with the SEC a registration statement to register for resale such investor's shares of Common Stock purchased pursuant to the applicable Additional Purchase Agreement and the shares of Common Stock issuable upon exercise of such investor's Additional Warrant. In addition, the Company may be required to effect certain registrations to register for resale such shares in connection with certain "piggy-back" registration rights granted to Beijing Shijilongxin, Frejoy and Yuhan.

On May 2, 2016, the Company closed its private placement of common stock and warrants with Yuhan for gross proceeds of $10.0 million. Yuhan purchased 1,801,802 shares of common stock at $5.55 per share and a warrant to purchase 235,294 shares of common stock. The warrant was exercisable for three years at an exercise price of $8.50 per share.

Between May 31, 2016 and June 7, 2016, the Company closed on the remainder of the $150.0 million financing with the ABG Purchasers, Beijing Shijilongxin, and Frejoy. The ABG Purchasers led the financing and, together with Beijing Shijilongxin and Frejoy, collectively purchased 25,225,221 shares of common stock at $5.55 per share, and warrants to purchase 5,055,642 shares of common stock for total cash consideration of $86.5 million and secured promissory notes (the "Notes") in an aggregate principal amount of $53.5 million.

On December 31, 2016, the Company entered into Warrant and Note Cancellation and Share Forfeiture Agreements (the "Cancellation and Forfeiture Agreements") with certain investors (the "Investors") that held an aggregate of 7,838,259 shares of Common Stock and certain of the Warrants granting the right to purchase an aggregate of 1,137,316 shares of Common Stock. Pursuant to the Cancellation and Forfeiture Agreements, effective December 31, 2016, the Warrants held by the Investors and the Notes, of which $43.5 million was then outstanding, were cancelled and the shares of Common Stock held by the Investors were forfeited and returned to the Company.

If the Company raises additional funds by issuing equity securities, substantial dilution to existing stockholders would 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.

3. Significant Accounting Policies

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. Management believes that these estimates are reasonable; however, actual results may differ from these estimates.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with original maturities of three months or less to be cash equivalents. The Company minimizes its credit risk associated with cash and cash equivalents by periodically evaluating the credit quality of its primary financial institution. The balance at times may exceed federally insured limits. The Company has not experienced any losses on such accounts.

Fair Value of Financial Instruments

The Company follows accounting guidance on fair value measurements for financial instruments measured on a recurring basis, as well as for certain assets and liabilities that are initially recorded at their estimated fair values. Fair value is defined as the exit price,

or the amount that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company uses the following three-level hierarchy that maximizes the use of observable inputs and minimizes the use of unobservable inputs to value its financial instruments:

- Level 1: Observable inputs such as unadjusted quoted prices in active markets for identical instruments.
    - Level 2: Quoted prices for similar instruments that are directly or indirectly observable in the marketplace.
- Level 3: Significant unobservable inputs which are supported by little or no market activity and that are financial instruments whose values are determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant judgment or estimation.

Financial instruments measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires it to make judgments and consider factors specific to the asset or liability. The use of different assumptions and/or estimation methodologies may have a material effect on estimated fair values. Accordingly, the fair value estimates disclosed or initial amounts recorded may not be indicative of the amount that the Company or holders of the instruments could realize in a current market exchange.

The carrying amounts of cash equivalents and marketable securities approximate their fair value based upon quoted market prices. Certain of the Company's financial instruments are not measured at fair value on a recurring basis, but are recorded at amounts that approximate their fair value due to their liquid or short-term nature, such as cash, accounts receivable and payable, and other financial instruments in current assets or current liabilities.

Marketable Securities

Marketable securities are designated either as trading or available-for-sale securities and are accounted for at fair value. Marketable securities are classified as short-term or long-term based on the nature of the securities and their availability to meet current operating requirements. Marketable securities that are readily available for use in current operations and are classified as short-term available-for-sale securities are reported as a component of current assets in the accompanying consolidated balance sheets. Marketable securities that are not trading securities and are not considered available for use in current operations are classified as long-term available-for-sale securities and are reported as a component of long-term assets in the accompanying consolidated balance sheets.

Securities that are classified as trading are carried at fair value, with changes to fair value reported as a component of income. Securities that are classified as available-for-sale are carried at fair value, with temporary unrealized gains and losses reported as a component of stockholders' equity until their disposition. The cost of securities sold is based on the specific identification method.

All of the Company's marketable securities are subject to a periodic impairment review. The Company recognizes an impairment charge when a decline in the fair value of its investments below the cost basis is judged to be other-than-temporary. For the year ended December 31, 2016, no other-than-temporary impairment charges were recorded.

Grants and Accounts Receivable

Grants receivable at December 31, 2016 and 2015 represent amounts due under several federal contracts with the National Institute of Allergy and Infectious Diseases ("NIAID"), a division of the National Institutes of Health ("NIH") (collectively, the "NIH Grants"). The Company considers the grants receivable to be fully collectible; accordingly, no

allowance for doubtful amounts has been established. If amounts become uncollectible, they are charged to operations.

Accounts receivable at December 31, 2016 and 2015 consists of trade receivables from sales and services provided to certain customers, which are generally unsecured and due within 30 days. Estimated credit losses related to trade accounts receivable are recorded as general and administrative expenses and as an allowance for doubtful accounts within grants and accounts receivable, net. The Company reviews reserves and makes adjustments based on historical experience and known collectability issues and disputes. When internal collection efforts on accounts have been exhausted, the accounts are written off by reducing the allowance for doubtful accounts. As of December 31, 2016 and 2015, the allowance for doubtful accounts was $26 thousand and $5 thousand, respectively.

Property and Equipment

Property and equipment are carried at cost less accumulated depreciation. Depreciation of property and equipment is computed using the straight-line method over the estimated useful lives of the assets, which are generally three to five years. Leasehold

improvements are amortized over the lesser of the life of the lease or the life of the asset. Repairs and maintenance are charged to expense as incurred.

Acquisitions and Intangibles

The Company has engaged in business combination activity. The accounting for business combinations requires management to make judgments and estimates of the fair value of assets acquired, including the identification and valuation of intangible assets, as well as liabilities assumed. Such judgments and estimates directly impact the amount of goodwill recognized in connection with each acquisition, as goodwill presents the excess of the purchase price of an acquired business over the fair value of its net tangible and identifiable intangible assets.

Goodwill and Other Long-Lived Assets

Goodwill, which has an indefinite useful life, represents the excess of cost over fair value of net assets acquired. Goodwill is reviewed for impairment at least annually during the fourth quarter, or more frequently if events occur indicating the potential for impairment. During its goodwill impairment review, the Company may assess qualitative factors to determine whether it is more likely than not that the fair value of its reporting unit is less than its carrying amount, including goodwill. The qualitative factors include, but are not limited to, macroeconomic conditions, industry and market considerations, and the overall financial performance of the Company. If, after assessing the totality of these qualitative factors, the Company determines that it is not more likely than not that the fair value of its reporting unit is less than its carrying amount, then no additional assessment is deemed necessary. Otherwise, the Company proceeds to perform the two-step test for goodwill impairment. The first step involves comparing the estimated fair value of the reporting unit with its carrying value, including goodwill. If the carrying amount of the reporting unit exceeds its fair value, the Company performs the second step of the goodwill impairment test to determine the amount of loss, which involves comparing the implied fair value of the goodwill to the carrying value of the goodwill. The Company may also elect to bypass the qualitative assessment in a period and elect to proceed to perform the first step of the goodwill impairment test. The Company performed its annual assessment for goodwill impairment in the fourth quarter of 2016, noting no impairment.

The Company evaluates its long-lived and intangible assets with definite lives, such as property and equipment, acquired technology, customer relationships, patent and license rights, for impairment by considering competition by products prescribed for the same indication, the likelihood and estimated future entry of non-generic and generic competition with the same or similar indication and other related factors. The factors that drive the estimate of useful life are often uncertain and are reviewed on a periodic basis or when events occur that warrant review. Recoverability is measured by comparison of the assets' book value to future net undiscounted cash flows that the assets are expected to generate. There have not been any impairment losses of long-lived assets through December 31, 2016.

Acquisition Consideration Payable - Gain on Contingent Liabilities

Acquisition consideration payable relates to the Company's acquisition of businesses and various other assets and is recorded on the Company's consolidated balance sheets at fair value and is re-measured at each balance sheet date until such contingent liabilities have been settled, with changes in fair value recorded as gain on contingent liabilities. The Company estimates the fair value of contingent consideration based on level 3 inputs primarily driven by the probability of achieving certain financing or operating related milestones.

Subsequent to the issuance of its third quarter financial statements, the Company identified an error related to the fair value measurement of the acquisition consideration payable as of December 31, 2015. Consequently, the 2016 gain on contingent liabilities includes a $991 thousand adjustment to the fair value of contingent consideration liability that relates to 2015.

Derivative Liability

Derivative liabilities are recorded on the Company's consolidated balance sheets at their fair value on the date of issuance and are revalued on each balance sheet date until such instruments are exercised or expire, with changes in the fair value between reporting periods recorded as other income or expense. The Company estimates the fair value of derivative liabilities using the Black-Scholes option pricing model.

Investments in Other Entities

The Company holds a portfolio of investments in equity securities that are accounted for under either the equity method or cost method. Investments in entities over which the Company has significant influence but not a controlling interest are accounted for using the equity method, with the Company's share of earnings or losses reported in loss on equity investments.

The Company's cost method investments are included in investments in common stock on the consolidated balance sheets. The Company's equity method investments are included in equity method investments on the consolidated balance sheets.

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: the magnitude of the impairment and length of time that the market value was below the 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; any other information that the Company may be aware of related to the investment. The Company does not report the fair value of its equity investments in non-publicly traded companies because it is not practical to do so.

Research and Development Costs and Collaborations

All research and development costs are charged to expense as incurred. Such costs primarily consist of lab supplies, contract services, stock-based compensation expense, salaries and related benefits.

Acquired In-Process Research and Development Expense

The Company has acquired and may continue to acquire the rights to develop and commercialize new drug candidates. The up-front payments to acquire a new drug compound, as well as future milestone payments, may be immediately expensed as acquired in-process research and development provided that the drug has not achieved regulatory approval for marketing and, absent obtaining such approval, have no alternative future use. Prior to November 8, 2016, all acquired IPR&D was expensed immediately. The acquired in-process research and development related to the business combination of Scilex Pharmaceuticals Inc. ("Scilex") for which certain products are under development and expected to be commercialized in the near future was capitalized and recorded within "Intangibles, net" on the accompanying consolidated balance sheet. Capitalized IPR&D will be reviewed annually for impairment or more frequently as changes in circumstance or the occurrence of events suggest that the remaining value may not be recoverable.

Income Taxes

The provisions of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 740 "Income Taxes," addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under ASC Topic 740-10, the Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. The Company has determined that it has uncertain tax positions.

The Company accounts for income taxes using the asset and liability method to compute the differences between the tax basis of assets and liabilities and the related financial amounts, using currently enacted tax rates.

The Company has deferred tax assets, which are subject to periodic recoverability assessments. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amount that more likely than not will be realized. As of December 31, 2016, the Company maintained a full valuation allowance against its deferred tax assets, with the exception of an amount equal to its deferred tax liabilities, which can be expected to reverse over a definite life.

Revenue Recognition

The Company's revenues are generated primarily from license fees, various NIH grant awards, and from the sale of customized reagents and the provision of contract development services. The revenue from the NIH grant awards is based upon subcontractor and internal costs incurred that are specifically covered by the grant, and where applicable, a facilities and administrative rate that provides funding for overhead expenses. These revenues are recognized when expenses have been incurred by subcontractors or when the Company incurs internal expenses that are related to the grant.

License fees for the licensing of product rights are recorded as deferred revenue upon receipt of cash and recognized as revenue on a straight-line basis over the license period.

Revenues from sales are generated from the sale of customized reagents which include industrial standard cytotoxins, linkers, and linker-toxins used for preparing ADCs. Contract development services include providing synthetic expertise to customers' synthesis by delivering proprietary cytotoxins, linkers and linker-toxins and ADC service using industry standard toxin and antibodies

provided by customers. Revenue is recognized when, (i) persuasive evidence of an arrangement exists, (ii) the product has been shipped or the services have been rendered, (iii) the price is fixed or determinable, and (iv) collectability is reasonably assured.

The Company is obligated to accept from customers the return of products sold that are damaged or do not meet certain specifications. The Company may authorize the return of products sold in accordance with the terms of its sales contracts, and estimates allowances for such amounts at the time of sale. The Company has not experienced any sales returns.

Stock-Based Compensation

The Company accounts for stock-based compensation in accordance with FASB ASC Topic 718 “Compensation – Stock Compensation,” which establishes accounting for equity instruments exchanged for employee services. Under such provisions, stock-based compensation cost is measured at the grant date, based on the calculated fair value of the award, and is recognized as an expense, under the straight-line method, over the employee’s requisite service period (generally the vesting period of the equity grant).

The Company accounts for equity instruments, including restricted stock or stock options, issued to non-employees in accordance with authoritative guidance for equity based payments to non-employees. Stock options issued to non-employees are accounted for at their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of options and restricted stock granted to non-employees is re-measured over the vesting period, and the resulting changes in fair value are recognized as expense in the period of the change in proportion to the services rendered to date.

Comprehensive (Loss) Income

Comprehensive (loss) income is primarily comprised of net income (loss) and adjustments for the change in unrealized gains and losses on the Company’s investments in available-for-sale marketable securities, net of taxes. The Company displays comprehensive (loss) income and its components in its consolidated statements of comprehensive (loss) income.

Net Loss per Share

Basic net loss per share is computed by dividing net loss for the period by the weighted average number of common shares outstanding during the period. Diluted net loss per share reflects the additional dilution from potential issuances of common stock, such as stock issuable pursuant to the exercise of stock options or the exercise of outstanding warrants. The treasury stock method and if-converted method are used to calculate the potential dilutive effect of these common stock equivalents. Potentially dilutive shares are excluded from the computation of diluted net loss per share when their effect is anti-dilutive. In periods where a net loss is presented, all potentially dilutive securities are anti-dilutive and are excluded from the computation of diluted net loss per share.

During 2016, 2015 and 2014, the Company had securities outstanding which could potentially dilute basic earnings per share in the future, but were excluded from the computation of diluted net loss per share, as their effect would have been anti-dilutive.

These outstanding securities consist of the following:

	Years Ended December 31,		
	2016	2015	2014
Outstanding options	4,332,876	2,960,816	2,235,000
Outstanding warrants	7,740,340	1,972,630	1,980,630

Segment Information

The Company is engaged primarily in the discovery and development of innovative therapies focused on oncology and the treatment of chronic cancer pain as well as immunology and infectious diseases based on its platform technologies. Accordingly, the Company has determined that it operates in one operating segment. During the quarter ended December 31, 2016, the Company acquired a majority stake in Scilex Pharmaceuticals, Inc. (“Scilex”) a developer of specialty pharmaceutical products for the treatment of chronic pain. The operating activities of Scilex are considered to be qualitatively and economically similar to the operating activities of the Company. The consolidated results of operations of Scilex were not material to the Company’s reported results for the year ended December 31, 2016.

Recent Accounting Pronouncements

In May 2014, the FASB issued Accounting Standards Update (“ASU”) No. 2014-09, Revenue from Contracts with Customers (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new

standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. ASU No. 2014-09 was originally effective for annual reporting periods beginning after December 15, 2016, and interim periods thereafter. In August 2015, the FASB issued ASU No. 2015-14, Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date, which delayed the effective date of the new standard for annual reporting periods beginning after December 15, 2017, and interim periods thereafter. The FASB also agreed to allow entities to choose to adopt the standard as of the original effective date. The standard allows for either a full retrospective or modified retrospective method of adoption. The Company is finalizing its assessment of the impact of the adoption including the election for either full retrospective or modified retrospective method of adoption; however, currently, the Company does not expect the adoption will have a material impact on its financial position and results of operations. The Company currently anticipates adopting this standard on its effective date, January 1, 2018. The Company has not experienced significant issues in its implementation process and it does not anticipate significant changes to its accounting policies.

In August 2014, FASB issued ASU No. 2014-15, Presentation of Financial Statements – Going Concern. The ASU provides guidance regarding management's responsibility to evaluate whether there exists substantial doubt about an organization's ability to continue as a going concern and to provide related footnote disclosures in certain circumstances. ASU No. 2014-15 is effective for annual reporting periods ended after December 15, 2015, and interim periods thereafter. The Company adopted this standard in the current year. The impact of the adoption of the standard is included in Footnote 2 to these financial statements.

In February 2015, the FASB issued ASU No. 2015-02, Consolidation (Topic 810)—Amendments to the Consolidation Analysis. The ASU affects reporting entities that are required to evaluate whether they should consolidate certain legal entities. Specifically, the amendments (1) modify the evaluation of whether limited partnerships and similar legal entities are variable interest entities ("VIEs") or voting interest entities, (2) eliminates the presumption that a general partner should consolidate a limited partnership, (3) affects the consolidation analysis of reporting entities that are involved with VIEs, and (4) provides a scope exception for certain entities. ASU No. 2015-02 was effective for interim and annual reporting periods beginning after December 15, 2015. The adoption of this standard did not have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments--Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The ASU amends the guidance in U.S. GAAP on the classification and measurement of financial instruments. Changes to the current guidance primarily affect the accounting for equity investments, financial liabilities under the fair value option, and the presentation and disclosure requirements for financial instruments. ASU No. 2016-01 is effective for fiscal years and interim periods beginning after December 15, 2017, and upon adoption, an entity should apply the amendments by means of a cumulative-effect adjustment to the balance sheet at the beginning of the first reporting period in which the guidance is effective. Early adoption is not permitted except for the provision to record fair value changes for financial liabilities under the fair value option resulting from instrument-specific credit risk in other comprehensive income. The adoption of this standard is not expected to have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In February 2016, the FASB issued ASU No. 2016-02, Leases. ASU No. 2016-2 is aimed at making leasing activities more transparent and comparable, and requires substantially all leases be recognized by lessees on their balance sheet as a right-of-use asset and corresponding lease liability, including leases currently accounted for as operating leases. ASU No. 2016-2 is effective for financial statements issued for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted. The Company is currently evaluating the impact that the adoption of ASU No. 2016-2 will have on its consolidated financial position, results of operations and cash flows.

In March 2016, the FASB issued ASU No. 2016-06, Derivatives and Hedging (Topic 815): Contingent Put and Call Options in Debt Instruments, which clarifies the steps required when assessing whether the economic characteristics and risks of call (put) options that can accelerate the payment of principal on debt instruments are clearly and closely related to their debt hosts based on a four-step decision process. ASU No. 2016-06 is effective for financial statements issued for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. The adoption of this standard is not expected to have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In March 2016, the FASB issued ASU No. 2016-07, Investments – Equity Method and Joint Ventures (Topic 323): Simplifying the Transition to the Equity Method of Accounting, requires that an entity that has an available-for-sale equity security that becomes qualified for the equity method of accounting recognize through earnings the unrealized holding gain or loss in accumulated other comprehensive income at the date the investment becomes qualified for the equity method and eliminates the requirement for retroactive adjustment of the investment as a result of an increase in the level of ownership interest or degree of influence. ASU No. 2016-07 is effective for financial statements issued for fiscal years and interim periods within those fiscal years beginning after December 15, 2016. The adoption of this standard is not expected to have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In March 2016, the FASB issued ASU No. 2016-09, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. The ASU includes various provisions to simplify the accounting for share-based payments with the goal of reducing the cost and complexity of accounting for share-based payments. The amendments may significantly impact net income, earnings per share and the statement of cash flows as well as present implementation and administration challenges for companies with significant share-based payment activities. ASU No. 2016-09 is effective for public companies for fiscal years beginning after December 15, 2016, including interim periods within those fiscal years. The adoption of this standard is not expected to have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments to improve financial reporting by requiring timelier recording of credit losses on loans and other financial instruments held by financial institutions and other organizations. The ASU requires the measurement of all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions and reasonable and supportable forecasts. The ASU also requires enhanced disclosures to help investors and other financial statement users better understand significant estimates and judgments used in estimating credit losses, as well as the credit quality and underwriting standards of an organization's portfolio. The ASU is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. Early application will be permitted for all organizations for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently evaluating the impact that the adoption of ASU No. 2016-13 will have on its consolidated financial position, results of operations and cash flows.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments, to improve financial reporting in regards to how certain transactions are classified in the statement of cash flows. The ASU requires that (1) debt extinguishment costs be classified as cash outflows for financing activities and provides additional classification guidance for the statement of cash flows, (2) the classification of cash receipts and payments that have aspects of more than one class of cash flows to be determined by applying specific guidance under generally accepted accounting principles, and (3) each separately identifiable source or use within the cash receipts and payments be classified on the basis of their nature in financing, investing or operating activities. The ASU is effective for fiscal years beginning after December 15, 2017, including interim periods within those fiscal years. The Company does not believe the adoption of ASU No. 2016-15 will have a material impact on the Company's consolidated financial position, results of operations or cash flows.

4. Acquisitions

Acquisition of Scilex Pharmaceuticals Inc.

On November 8, 2016, the Company entered into a stock purchase agreement with a majority of the stockholders of Scilex to acquire approximately 72% of the outstanding capital stock of Scilex. Scilex focuses on the development and commercialization of specialty pharmaceutical products for the treatment of pain; its lead product, ZTlido™, is a branded lidocaine patch formulation being developed for the treatment of chronic pain. ZTlido™ (lidocaine patch 1.8%) will be manufactured by a contract manufacturer. On November 8, 2016, in connection with the closing of this transaction, the Company acquired approximately 72% of the outstanding capital stock of Scilex for approximately $4.8 million in shares of the Company and contingent consideration of up to approximately $42.9 million payable in

shares of the Company, subject to the achievement of certain regulatory approvals related to new drug applications, and noncontrolling interest of approximately $14.0 million. At November 8, 2016, the contingent consideration was valued at $40.0 million, resulting in a total purchase consideration of approximately $44.8 million. The fair value of the contingent consideration is recorded as a current liability and will be adjusted as events and circumstances arise. The remainder of the outstanding capital stock of Scilex represents a noncontrolling interest of which approximately 23% continues to be held by ITOCHU CHEMICAL FRONTIER CORPORATION (“Itochu”) following the acquisition.

The consolidated and combined financial statements include the results of operations from this transaction, which have been accounted for as a business combination, and require, among other things, that assets acquired and liabilities assumed be recognized at their fair values as of the acquisition date. The valuation of the acquired assets and liabilities resulted in the recognition of identifiable assets of approximately $62.5 million comprised mainly of in-process research and development of $25.2 million, patents of $36.0 million, and goodwill of $18.1 million. Various factors contributed to the establishment of goodwill, including an assembled workforce.

The consolidated results of operations of Scilex were not material to the Company’s reported results for the year ended December 31, 2016.

Acquired In-process Research and Development of Cargenix

In August 2015, the Company and TNK Therapeutics, Inc., its subsidiary ("TNK") entered into a Membership Interest Purchase Agreement (the "Membership Interest Purchase Agreement") with CARgenix Holdings LLC ("CARgenix") and the members of CARgenix (the "Members") pursuant to which the Members sold all of their membership interests in CARgenix to TNK for: (1) a cash payment of $100.00, and (2) $6.0 million in shares of TNK Class A common stock ("TNK Class A Stock"), subject to adjustment in certain circumstances, to be issued to the Members upon a financing resulting in gross proceeds (individually or in the aggregate) to TNK of at least $50.0 million (a "Qualified Financing"). In accordance with an amendment to the Membership Interest Purchase Agreement entered into in March 2016, in the event a Qualified Financing did not occur by September 15, 2016 or TNK did not complete an initial public offering of shares of its capital stock by October 15, 2016, in lieu of receiving shares of TNK pursuant to the acquisition, the Members would receive an aggregate of 309,917 shares of the Company's common stock, subject to adjustment in certain circumstances. TNK did not complete a Qualified Financing by the amended financing deadline and the Company issued 309,917 shares of its common stock to the Members on October 7, 2016.

Acquired In-process Research and Development of BDL

In August 2015, the Company and TNK entered into a Stock Purchase Agreement (the "Stock Purchase Agreement") with BDL Products, Inc. ("BDL") and the stockholders of BDL ("Stockholders") pursuant to which the Stockholders sold all of their shares of capital stock in BDL to TNK for: (1) a cash payment of $100.00, and (2) $6.0 million in shares of TNK Class A Stock, subject to adjustment in certain circumstances, to be issued to the Stockholders upon a Qualified Financing. In accordance with subsequent amendments to the Stock Purchase Agreement, in the event a Qualified Financing does not occur by October 15, 2017 or TNK does not complete an initial public offering of shares of its capital stock by September 15, 2017, in lieu of receiving shares of TNK pursuant to the acquisition, the Stockholders shall receive an aggregate of 309,917 shares of the Company's common stock, subject to adjustment in certain circumstances.

5. Fair Value Measurements

Fair value measurement is defined as the price that would be received to sell 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 at the measurement date. A fair value hierarchy is established, which prioritizes the inputs used in measuring fair value into three broad levels as follows:

Level 1—Quoted prices in active markets for identical assets or liabilities.

Level 2—Inputs, other than quoted prices in active markets, that are observable either directly or indirectly.

Level 3—Unobservable inputs based on the Company's own assumptions.

The following table presents the Company’s financial assets and liabilities that are measured at fair value on a recurring basis. (in thousands):

	Fair Value Measurements at December 31, 2016			
	Balance	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Cash and Cash Equivalents	$82,398	$82,398	$ —	$ —
Marketable securities	$1,106	$831	$ —	$ 275
Total assets	$83,504	$83,504	$ —	$ —
Liabilities:				
Acquisition consideration payable	$48,362	$—	$ —	$ 48,362
Total liabilities	$48,362	$—	$ —	$ 48,362

	Fair Value Measurements at December 31, 2015			
	Balance	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Marketable securities	$97,366	$97,366	$ —	$ —
Total assets	$97,366	$97,366	$ —	$ —
Liabilities:				
Derivative liability	$5,520	$—	$ —	$ 5,520
Total liabilities	$5,520	$—	$ —	$ 5,520

The Company's financial assets and liabilities carried at fair value are comprised of cash and cash equivalents acquisition consideration payable and derivative instruments. Cash and cash equivalents consist of money market accounts and bank deposits which are highly liquid and readily tradable. These investments are valued using inputs observable in active markets for identical securities. Marketable securities are valued using inputs observable in active markets for identical securities. The Company recorded contingent consideration as part of its acquisitions of Shanghai Three Alliance Biotech Co. LTD (“Shanghai Three”), Roger Williams Medical Center (“RWMC”), Concortis, Inc., (“Concortis”), BDL, CARgenix, and Scilex. The fair value of the contingent consideration measured at fair value on a recurring basis using significant unobservable inputs (Level 3). Contingent consideration is measured using the income approach and discounting to present value the contingent payments expected to be made based on assessment of the probability that the company would be required to make such future payment.

In August 2015, the Company recorded $12 million of contingent consideration related to the asset acquisitions of CARgenix and BDL. In October 2016 the $6 million contingent liability associated with the CARgenix acquisition was settled. During the year, the Company recorded a $2.3 million gain associated with the re-measurement to fair value of the contingent consideration associated with the CARgenix contingent consideration. The contingent liability associated with the BDL acquisition was $6 million as of the beginning of the year and was re-measured based on fair value in the current year, resulting in a $2.7 million gain recognized in earnings. The gains recognized in earnings are recorded in the consolidated statement of operations as gain or loss on contingent liabilities.

The following table includes a summary of the contingent consideration liabilities associated with acquisitions entered into during the year ended December 31, 2016. The contingent consideration is measured at fair value using significant unobservable inputs (Level 3) during the twelve months ended December 31, 2016:

(in thousands)	2016
Fair Value at Beginning of Year	—
Contingent consideration – current year acquisitions	46,826
Remeasurement of Fair Value – current year acquisitions	(1,775)
Payment of current year contingent consideration	—

Balance at End of Year	$45,052

The following table includes a summary of the derivative liabilities measured at fair value using significant unobservable inputs (Level 3) during the twelve months ended December 31, 2016.

(in thousands)	2016
Fair Value at Beginning of Year	$5,520
Additions	—
Expiration of derivative liability	(5,520)
Payments	—
Balance at End of Year	$—

The following table presents quantitative information about the inputs and valuation methodologies used for the Company’s fair value measurements classified in Level 3 of the fair value hierarchy at December 31, 2016:

	Fair Value at 12/31/16 (in thousands)	Valuation Methodology	Significant Unobservable Input	Weighted Average (range, if applicable)
BDL Contingent Consideration	$ 3,311	Multiple outcome discounted cash flow	Discount Rate Percent probabilities assigned to scenarios	15.71% 50%
Scilex Contingent Consideration	$40,000	Multiple outcome discounted cash flow	Discount Rate Probability of Regulatory Milestone	2.28% 95%
Concortis Contingent Consideration	$ 596	Multiple outcome discounted cash flow	Discount Rate Percent probabilities assigned to scenarios	12.21% 20%
Shanghai Three Contingent Consideration	$1,782	Multiple outcome discounted cash flow	Discount Rate Percent probabilities assigned to scenarios	12.21% 50%
RWMC Contingent Consideration	$2,673	Multiple outcome discounted cash flow	Discount Rate, Percent probabilities assigned to scenarios	12.21% 50%

The principal significant unobservable inputs used in the valuations of the contingent considerations are the discount rates, and probabilities assigned to scenario outcomes. An increase in the discount rate or regulatory milestone will cause a decrease in the fair value of the contingent consideration. Conversely, a decrease in the discount rate will cause an increase in the fair value of the contingent consideration. An increase in the probabilities assigned to certain scenarios will cause the fair value of contingent consideration to increase. Conversely, a decrease in the probabilities assigned to certain scenarios will cause the fair value of contingent considerations to decrease.

Fair Value of Other Financial Instruments

The carrying value and fair value of the company’s notes receivable and debt obligations are as follows (in thousands):

	December 31, 2016	
	Carrying Value	Fair Value

Debt Obligations:		
Term Loan	47,316	47,316
	$47,316	$47,316

6. Marketable Securities

Marketable securities consisted of the following as of December 31, 2016 (in thousands):

	December 31, 2016			
	Cost	Gross Unrealized Gains (Losses)	Gross Realized Gains (Losses)	Fair Value
Trading securities:				
MedoveX common shares and warrants	$ 750	$ 356	$ —	$ 1,106

	December 31, 2015			
	Cost	Gross Unrealized Gains (Losses)	Gross Realized Gains (Losses)	Fair Value
Avaliable-for-sale securities:				
NantKwest common shares and warrants	$ 10,000	$ 87,366	$ —	$ 97,366

Available-for-sale Securities

On July 27, 2015, NantKwest, Inc. (“NantKwest”) completed its initial public offering (“IPO”). Prior to the IPO the Company’s investment in NantKwest was accounted for using the cost method and the total investment of $10.0 million was classified as part of investments in common stock on the Company’s consolidated balance sheets. The common shares were subject to restrictions in a lock-up agreement through December 27, 2015 as well as limitations under Rule 144 of the Securities Act of 1933, as amended. As these were short term restrictions, the Company did not apply a marketability discount. At December 31, 2015, the Company recorded an unrealized gain of $73.6 million, representing the difference between the $10.0 million cost basis and the estimated fair value net of tax, as accumulated other comprehensive income in the stockholder's equity section of the Company’s consolidated balance sheet and as a change in unrealized gains and losses on marketable securities in the Company’s consolidated statements of comprehensive income (loss). The Company’s investment in NantKwest was revalued on each balance sheet date. The fair value of the Company’s holdings in NantKwest at December 31, 2015 is a Level 1 measurement.

In July 2016, the Company completed the transactions contemplated by a letter agreement (the “Letter Agreement”) with the Chan Soon-Shiong Family Foundation (“Foundation”) and Cambridge Equities, LP (“Cambridge”). Pursuant to the terms of the Letter Agreement, among other things, (i) the Company agreed to sell to Foundation, and Foundation agreed to purchase from the Company, an aggregate of 5,618,326 shares of common stock of NantKwest held by the Company (representing all shares of NantKwest held by the Company), (ii) Foundation agreed to sell to the Company, and the Company agreed to purchase all reported shares held by Foundation and Cambridge, constituting an aggregate of 7,878,098 shares of Common Stock, (iii) Cambridge agreed to forfeit its right to purchase 500,000 shares of Common Stock issuable pursuant to a warrant to purchase 1,724,138 shares of Common Stock issued by the Company, and (iv) the Company agreed to pay to Foundation an aggregate of approximately $15.6 million. Effective upon closing, the Company repurchased the 7,878,098 shares of Common Stock. The Company recognized a gain of $27.2 million on the sale of the NantKwest stock in its consolidated statement of operations for the twelve months ended December 31, 2016 as a result of the transaction.

Trading Securities

On August 5, 2016, the Company entered into a Unit Purchase Agreement (the "Unit Purchase Agreement") with MedoveX Corporation ("MedoveX"). Pursuant to the terms of the Unit Purchase Agreement, the Company purchased three Units for $750 thousand. Each Unit had a purchase price of $250 thousand and consisted of (i) 208,333 shares of MedoveX common stock (the "MedoveX Common Stock"), and (ii) a warrant to purchase 104,167 shares of MedoveX Common Stock (the "MedoveX Warrant"). The MedoveX Warrant has an initial exercise price of $1.52 per share, subject to adjustment, and is initially exercisable six months following the date of issuance for a period of five years from the date of issuance. In addition, the Company entered into a Registration Rights Agreement with MedoveX pursuant to which MedoveX was required to file a registration statement registering for resale all shares of MedoveX Common Stock and shares of MedoveX Common Stock issuable pursuant to the MedoveX Warrant issued as part of the Units. The Company recorded a gain on trading securities of $356 thousand, representing the difference between the $750 thousand cost basis and the estimated fair value as of December 31, 2016, in the Company's consolidated statements of operations. The Company's investment in MedoveX will be revalued on each balance sheet date. The fair value of the Company's holding in MedoveX Common Stock at December 31, 2016 is a Level 1 measurement. The fair value of the Company's holdings in the MedoveX Warrant was estimated using the Black-Scholes option-pricing method. The risk-free rate was derived from the U.S. Treasury yield curve, matching the MedoveX Warrant's term, in effect at the measurement date. The volatility factor was determined based on MedoveX's historical stock prices. The warrant valuation is a Level 3 measurement.

The following table includes a summary of the warrant measured at fair value using significant unobservable inputs (Level 3) during the twelve months ended December 31, 2016 (in thousands):

	Total
Beginning balance at December 31, 2015	$—
Addition of warrant	291
Change in fair value of warrant	(16)
Ending balance at December 31, 2016	$275

7. Property and Equipment

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

	December 31,	
	2016	2015
Furniture and fixtures	458	282
Office equipment	326	128
Machinery and lab equipment	13,220	7,519
Leasehold improvements	3,625	2,034
	17,630	9,963
Less accumulated depreciation	(4,922)	(2,717)
	$12,707	$7,246

Depreciation expense for the years ended December 31, 2016, 2015 and 2014 was $1,951 thousand, $1,134 thousand and $754 thousand, respectively.

8. Investments in Common Stock

As of December 31, 2016 and 2015, the aggregate carrying amount of the Company's cost-method investments in non-publicly traded companies was $112.0 million and included an ownership interest in NantCell, Inc. ("NantCell"), NantBioScience, Inc. ("NantBioScience"), Globavir Biosciences, Inc., Brink Biologics, Inc., and Coneksis, Inc. The Company's cost-method investments are assessed for impairment quarterly. The Company has determined that it is not practicable to estimate the fair value of its cost-method investments on a regular basis and does not reassess the fair value of cost-method investments if there are no identified events or changes in circumstances that may have a significant adverse effect on the fair value of the investments. No impairment losses were recorded during the years

ended December 31, 2016, 2015 and 2014.

9. Equity Method Investments

NANTibody

In April 2015, the Company and NantCell, a wholly-owned subsidiary of NantWorks, Inc. (“NantWorks”), a private company owned by Dr. Patrick Soon-Shiong, established a new entity called Immunotherapy NANTibody, LLC (“NANTibody”) as a stand-alone biotechnology company with $100.0 million initial joint funding. NantCell owns 60% of the equity interest of NANTibody and agreed to contribute $60.0 million to NANTibody. The Company owns 40% of NANTibody and in July 2015, the Company had NantPharma, LLC (“NantPharma”) contribute its portion of the initial joint funding of $40.0 million to NANTibody from the proceeds of the sale of IgDraSol, Inc. (“IgDraSol”). NANTibody will focus on accelerating the development of multiple immuno-oncology mAbs for the treatment of cancer, including but not limited to anti-PD-1, anti-PD-L1, anti-CTLA4 mAbs, and other immune-check point antibodies as well as ADCs and bispecific antibodies.

The Company is accounting for its interest in NANTibody as an equity method investment, due to the significant influence the Company has over the operations of NANTibody through its board representation and 40% voting interest. The Company’s investment in NANTibody is reported in equity method investments on its consolidated balance sheets and its share of NANTibody’s loss is recorded in loss on equity investments on its consolidated statement of operations. As of December 31, 2016, the carrying value of the Company’s investment in NANTibody was approximately $40 million.

NANTibody recorded net loss of $95 thousand for the period from its inception in April 2015 through September 30, 2015 and net income of $592 thousand for its year-to-date period September 30, 2016. As of September 30, 2016, NANTibody had $100.7 million in current assets and $242 thousand in current liabilities and no noncurrent assets or noncurrent liabilities.

The financial statements of NANTibody are not received sufficiently timely for the Company to record its portion of earnings or loss in the current financial statements and therefore the Company reports its portion of earnings or loss on a quarter lag.

NantStem

In July 2015, the Company and NantBioScience, a wholly-owned subsidiary of NantWorks, established a new entity called NantCancerStemCell, LLC ("NantStem") as a stand-alone biotechnology company with $100.0 million initial joint funding. As initially organized, NantBioScience was obligated to make a $60.0 million cash contribution to NantStem for a 60% equity interest in NantStem, and the Company was obligated to make a $40.0 million cash contribution to NantStem for a 40% equity interest in NantStem. Fifty percent of these contributions were funded in July 2015 and the remaining amounts were to be made by no later than September 30, 2015. The Company had NantPharma contribute its portion of the initial joint funding of $20.0 million to NantStem from the proceeds of the sale of IgDraSol. Pursuant to a Side Letter dated October 13, 2015, the NantStem joint venture agreement was amended to relieve the Company of the obligation to contribute the second $20.0 million payment, and its ownership interest in NantStem was reduced to 20%. NantBioScience's funding obligations were unchanged. The Side Letter was negotiated at the same time the Company issued a call option on shares of NantKwest that it owned to Cambridge, a related party to NantBioScience.

In the fourth quarter of 2015, the Company determined it had an other-than-temporary decline in the value of NantStem and recognized a loss of $4.0 million in loss on equity investments on its consolidated statement of operations for the year ended December 31, 2015. There was no loss related to other-than-temporary impairment recognized for the equity investment for the year ended December 31, 2016.

The Company is accounting for its interest in NantStem as an equity method investment, due to the significant influence the Company has over the operations of NantStem through its board representation and 20% voting interest. The Company's investment in NantStem is reported in equity method investments on its consolidated balance sheets and its share of NantStem's loss is recorded in loss on equity investments on its consolidated statement of operations. As of December 31, 2016, the carrying value of the Company's investment in NantStem was approximately $18.5 million.

NantStem recorded net loss of $15 thousand for the period from its inception in July 2015 through September 30, 2015 net income of $1.7 million for its year-to-date period ended September 30, 2016. As of September 30, 2016, NantStem had $81.7 million in current assets and no current liabilities and no noncurrent assets or noncurrent liabilities.

The financial statements of NantStem are not received sufficiently timely for the Company to record its portion of earnings or loss in the current financial statements and therefore the Company reports its portion of earnings or loss on a quarter lag.

Yuhan Agreement

In March 2016, the Company and Yuhan Corporation, a South Korea company ("Yuhan"), entered into an agreement to form a joint venture company called ImmuneOncia Therapeutics, LLC ("ImmuneOncia") to develop and commercialize a number of immune checkpoint antibodies against undisclosed targets for both hematological malignancies and solid tumors. Under the terms of the joint venture agreement, Yuhan contributed an initial investment of $10.0 million to ImmuneOncia, and the Company granted ImmuneOncia an exclusive license to one of its immune checkpoint antibodies for specified countries while retaining the rights for the U.S., European and Japanese markets, as well as global rights for ImmuneOncia to two additional antibodies that will be selected by ImmuneOncia from a group of

pre-specified antibodies from the Company's immuno-oncology antibody portfolio. Yuhan owns 51% of ImmuneOncia, while the Company owns 49%.

In April 2016, Yuhan purchased $10.0 million of shares of Common Stock, and warrants as part of the Company's private placement offering.

The Company is accounting for its interest in Yuhan as an equity method investment, due to the significant influence the Company has over the operations of Yuhan through its board representation and 49% voting interest while not sharing joint control with Yuhan. The Company's investment in ImmuneOncia is reported in equity method investments on its consolidated balance sheets and its share of Yuhan's loss is recorded in loss on equity investments on its consolidated statement of operations. As of December 31, 2016, the carrying value of the Company's investment in Yuhan was approximately $9.5 million.

Celularity Transaction

On November 1, 2016, the Company loaned $5.0 million to Celularity, Inc., a research and development company ("Celularity"), pursuant to a promissory note issued by Celularity to the Company (the "Celularity Note") in connection with the entry into a nonbinding term sheet by the Company, TNK and Celularity. Pursuant to the terms of the Celularity Note, the loan will be due and

payable in full on the earlier of November 1, 2017 and the occurrence of an event of default under the Celularity Note (the "Maturity Date"). The Celularity Note also provides that, in certain circumstances, the Company shall loan Celularity up to an additional $5.0 million over the next 12 months. In the event that Celularity meets certain minimum financing conditions prior to the Maturity Date, all outstanding amounts under the Celularity Note shall be forgiven and converted to equity.

The Company is accounting for its interest in Celularity as an equity method investment, due to the significant influence the Company has over the operations of Celularity through its minimum 30% voting interest. The Company's investment in Celularity is reported in equity method investments on the consolidated balance sheets and its share of Celularity's income or loss is recorded in income (loss) on equity investments on the consolidated statement of operations. The financial statements of Celularity are not received sufficiently timely for the Company to record its portion of earnings or loss in the current financial statements and therefore the Company reports its portion of earnings or loss on a quarter lag. As of December 31, 2016, the carrying value of the Company's investment in Celularity was approximately $5.0 million

Shanghai Three

The Company is accounting for its interest in Shanghai Three-Alliance Biotech Co. LTD ("Shanghai Three"), a China based company, as an equity method investment, due to the significant influence the Company has over the operations of Shanghai Three through its 25% voting interest. The Company's investment in Shanghai Three is reported in equity method investments on the consolidated balance sheets and its share of Shanghai Three's income or loss is recorded in income (loss) on equity investments on the consolidated statement of operations. The financial statements of Shanghai Three are not received sufficiently timely for the Company to record its portion of earnings or loss in the current financial statements and therefore the Company reports its portion of earnings or loss on a quarter lag. As of December 31, 2016, the carrying value of the Company's investment in Shanghai Three was approximately $2.8 million.

Shanghai Three incurred no operating expenses for the three and nine months ended September 30, 2016. As of September 30, 2016, Shanghai Three had approximately $0.5 million in current assets, $5.1 million in noncurrent assets, $3.0 million in current liabilities, and $2.0 million in noncurrent liabilities.

3SBio Term Sheet

In June 2016, the Company and TNK entered into a binding term sheet with Shenyang Sunshine Pharmaceutical Company Ltd ("3SBio"), a China based company, to form a joint venture to develop and commercialize proprietary immunotherapies, including those developed from, including or using TNK's CAR-T technology targeting carcinoembryonic antigen ("CEA") positive cancers. Due diligence and negotiations between 3SBio and the Company for the definitive agreement(s) are currently ongoing.

Under the terms of the agreement 3SBio will contribute an initial investment of $10.0 million to the joint venture and TNK will grant the joint venture an exclusive license to the CEA CAR-T technology and two additional CARs for cellular therapy for the Greater China market, including Mainland China, Hong Kong and Macau. 3SBio will own 51% of the joint venture while TNK will own 49%. As of December 31, 2016, funding and operations of the joint venture had not yet begun, as a result no investment has been recorded as of December 31, 2016.

In June 2016, 3SBio purchased $10.0 million of Common Stock and warrants as part of the Company's private placement offering.

10. Goodwill and Intangible Assets

As of December 31, 2016 and 2015, the Company had goodwill of $41,548 thousand and $20,626 thousand, respectively. The Company performed a qualitative test for goodwill impairment as of December 31, 2016. Based upon the results of the qualitative testing the Company concluded that it is more-likely-than-not that the fair values of the Company's goodwill was in excess of its carrying value and therefore performing the first step of the two-step impairment test was unnecessary. No goodwill impairment was recognized for the years ended December 31, 2016 and 2015.

The following is a summary of changes in the Company's recorded goodwill during the year ended December 31, 2016 (in thousands):

	Amount
Balance at December 31, 2015	$20,626
Goodwill attributable to acquisition of Scilex and other	20,922
Balance as December 31, 2016	$41,548

The Company's intangible assets, excluding goodwill, include acquired license and patent rights, core technologies, customer relationships and acquired in-process research and development. Amortization for the intangible assets that have finite useful lives is generally recorded on a straight-line basis over their useful lives. A summary of the Company's identifiable intangible assets as of December 31, is as follows (in thousands):

	December 31, 2016		
	Gross Carrying Amount	Accumulated Amortization	Intangibles, net
Customer relationships	$1,585	$ 801	$ 784
Acquired technology	3,410	533	2,877
Acquired in-process research and development	25,404	—	25,404
Patent rights	36,120	419	35,701
Total intangible assets	$66,519	$ 1,753	$ 64,766

	December 31, 2015		
	Gross Carrying Amount	Accumulated Amortization	Intangibles, net
Customer relationships	$1,320	$ 536	$ 784
Acquired technology	3,410	358	3,052
Patent rights	90	14	76
Total intangible assets	$4,820	$ 908	$ 3,912

As of December 31, 2016, the remaining weighted average life for identifiable intangible assets is 15 years.

Patent rights are stated at cost and amortized on a straight-line basis over the estimated useful lives of the assets, determined to be approximately fifteen years or nineteen years from the date of transfer of the rights to the Company. Amortization expense for the years ended December 31, 2016 and 2015 was $405 thousand and $5 thousand, respectively, which has been included in intangibles amortization.

Acquired technology is stated at cost and amortized on a straight-line basis over the estimated useful lives of the assets, determined to be approximately nineteen years from the date of acquisition of the technology in December 2013. Amortization expense for the years ended December 31, 2016 and 2015 was $176 thousand and $176 thousand,

respectively, which has been included in intangibles amortization.

Customer relationships are stated at cost and amortized on a straight-line basis over the estimated useful lives of the assets and are generally determined to be approximately five years from the date of acquisition. Amortization expense for the years ended December 31, 2016 and 2015 was $264 thousand and $264 thousand, respectively, which has been included in intangibles amortization.

Acquired in-process research and development is stated at cost and may be immediately expensed if there is no alternative future use. Otherwise, the acquired in-process research and development is reviewed annually for impairment or more frequently as changes in circumstance or the occurrence of events suggest that the remaining value may not be recoverable.

Estimated future amortization expense related to intangible assets at December 31, 2016 is as follows (in thousands):

Years Ending December 31,	Amount
2017	$2,886
2018	4,138
2019	4,303
2020	4,303
2021	4,303
Thereafter	44,833
Total	$64,766

11. Significant Agreements and Contracts

License Agreement with Les Laboratoires Servier

On July 11, 2016, the Company announced a license and collaboration agreement with Les Laboratoires Servier, SAS, a corporation incorporated under the laws of France, and Institut de Recherches Internationales Servier, a company duly organized and existing under the laws of France (individually and collectively, “Servier”) for the development, manufacture and commercialization of products using the Company’s fully human immuno-oncology anti-PD-1 mAb STI-A1110 and will provide support for Sevier’s initial development efforts. Pursuant to the financial terms of the agreement, the Company received a non-refundable up-front payment of $27.4 million in July of 2016, which has been recorded as deferred revenue in the Company’s consolidated balance sheet and may also receive various payments based on commercial sales milestones related to annual sales levels. The Company will recognize the upfront payment over the expected period of performance of three years. During the twelve months ended December 31, 2016, the Company recognized $3.8 million in license fee revenue pursuant to the agreement.

License Agreement with Mabtech Limited

In August 2015, the Company entered into an exclusive licensing agreement to develop and commercialize multiple prespecified biosimilar and biobetter antibodies from Mabtech Limited. Under the terms of the agreement, the Company will develop and market these four mAbs for the North American, European and Japanese markets. The Company made an initial license payment of $10.0 million and in February 2016, paid an additional $10.0 million license payment, both of which were recognized as acquired in-process research and development expense in the consolidated statements of operations as the Company determined there was no alternative future use for the license.

In June 2016, the Company agreed to accelerate and pay a $30.0 million milestone license payment which has been recognized as acquired in-process research and development expense in the consolidated statements of operations, in exchange for the purchase by Mabtech Limited and one or more of its affiliates in June 2016, of $20.0 million of Common Stock and warrants. The amended agreement includes additional milestone payments totaling $150.0 million payable following the completion of the technology transfer from Mabtech Limited.

Immunotherapy Research Collaboration Agreement with Roger Williams Medical Center

In exchange, the Company, the Company granted Roger Williams Medical Center $6.0 million in shares of TNK Class A Stock, subject to adjustment in certain circumstances, to be issued upon a financing resulting in gross proceeds (individually or in the aggregate) to TNK of at least $20.0 million. The Company determined the fair value

of this obligation was $3.4 million as of the April of 2016 agreement effective date, and the amount was recognized as Prepaid expense and other and Acquisition consideration payable in the consolidated balance sheet. The Company will recognize the upfront payment over the expected performance period of five years. During the twelve months ended December 31, 2016, the Company recognized approximately $0.5 million in pre-clinical research and development expense pursuant to the agreement.

License Agreement with NantCell

In April 2015, the Company and NantCell entered into a license agreement. Under the terms of the agreement the Company granted an exclusive license to NantCell covering patent rights, know-how, and materials related to certain antibodies, ADCs and two CAR-TNK products. NantCell agreed to pay a royalty not to exceed five percent (5%) to the Company on any net sales of products (as defined) from the assets licensed by the Company to NantCell. In addition to the future royalties payable under this agreement, NantCell paid an upfront payment of $10.0 million to the Company and issued 10 million shares of NantCell common stock to the Company valued at $100.0 million based on a recent equity sale of NantCell common stock to a third party. As of December 31, 2016, the Company had not yet provided all of the items noted in the agreement and therefore has recorded the entire upfront payment and

value of the equity interest received as deferred revenue. The Company will recognize the upfront payment and the value of the equity interest received over the expected license period of approximately ten years on a straight line basis. The Company's ownership interest in NantCell does not provide the Company with control or the ability to exercise significant influence; therefore the $100.0 million investment is carried at cost in the consolidated balance sheets and evaluated for other-than-temporary impairment on a quarterly basis.

License Agreement with The Scripps Research Institute

In January 2010, the Company entered into a license agreement (the "TSRI License") with The Scripps Research Institute ("TSRI"). Under the TSRI License, TSRI granted the Company an exclusive, worldwide license to certain TSRI patent rights and materials based on quorum sensing for the prevention and treatment of Staphylococcus aureus ("Staph") infections, including Methicillin-resistant Staph. In consideration for the license, the Company: (i) issued TSRI a warrant for the purchase of common stock, (ii) agreed to pay TSRI a certain annual royalty commencing in the first year after certain patent filing milestones are achieved, (iii) agreed to pay a royalty on any sales of licensed products by the Company or its affiliates and a royalty for any revenues generated by the Company through its sublicense of patent rights and materials licensed from TSRI under the TSRI License. The TSRI License requires the Company to indemnify TSRI for certain breaches of the agreement and other matters customary for license agreements. The parties may terminate the TSRI License at any time by mutual agreement. In addition, the Company may terminate the TSRI License by giving 60 days' notice to TSRI and TSRI may terminate the TSRI License immediately in the event of certain breaches of the agreement by the Company or upon the Company's failure to undertake certain activities in furtherance of commercial development goals. Unless terminated earlier by either or both parties, the term of the TSRI License will continue until the final expiration of all claims covered by the patent rights licensed under the agreement. For the years ended December 31, 2016, 2015 and 2014, the Company recorded $106 thousand, $123 thousand and $142 thousand in patent prosecution and maintenance costs associated with the TSRI License, respectively. All such costs have been included in general and administrative expenses.

NIH Grants

In June 2014, the NIAID awarded the Company a Phase II Small Business Technology Transfer ("STTR") grant (the "Staph Grant III Award") to support the advanced preclinical development of human bispecific antibody therapeutics to prevent and treat Staphylococcus aureus ("S. aureus" or "Staph") infections, including methicillin-resistant S. aureus ("MRSA"). The project period for the Staph Grant III Award covered a two-year period which commenced in June 2014, with total funds available of approximately $1.0 million per year for up to 2 years. During the years ended December 31, 2016 and 2015, the Company recorded $699 thousand and $884 thousand of revenue associated with the Staph Grant III Award, respectively.

In June 2014, the NIAID awarded the Company a Phase I STTR grant (the "Phase I STTR Grant Award") entitled "Anti-Pseudomonas Immunotherapy and Targeted Drug Delivery." The Phase I STTR Grant Award was to support the preclinical development of novel anti-Pseudomonas aeruginosa mAb immunotherapy or an antibody-mediated targeted antibiotic delivery vehicle. Each modality may be an effective and safe stand-alone therapy and/or a component of a "cocktail" therapeutic option for prevention and treatment of P. aeruginosa infections. The project period for the Phase I STTR Grant Award covered a two-year period which commenced in July 2014, with total funds available of approximately $300 thousand per year for up to 2 years. During the years ended December 31, 2016 and 2015, the Company recorded $256 thousand and $302 thousand of revenue associated with the Phase I STTR Grant Award, respectively.

In July 2014, the National Cancer Institute ("NCI"), a division of the NIH, awarded the Company a Phase I STTR grant, entitled "Targeting of Myc-Max Dimerization for the Treatment of Cancer" (the "Phase I Myc Grant Award"). The Phase I Myc Grant Award was to support the preclinical development of the Myc inhibitor, which interferes with the protein-protein interaction ("PPI") between Myc and its obligatory dimerization partner, Max, preventing sequence-specific binding to DNA and subsequent initiation of oncogenic transformation. The project period for the Phase I Myc Grant Award covered a one-year period which commenced in August 2014, with total funds available of approximately $225 thousand. During the years ended December 31, 2016 and 2015, the Company recorded $0 and $139 thousand of revenue associated with the Phase I Myc Grant Award, respectively.

In August 2014, the National Heart, Lung, and Blood Institute ("NHBLI"), a division of the NIH, awarded the Company a Phase I Small Business Innovation Research ("SBIR") grant entitled "Human Anti-WISP-1 Antibodies for Treatment of Idiopathic Pulmonary Fbrosis" (the "Phase I WISP1 Grant Award"). The Phase I WISP1 Grant Award was to advance the Company's immunotherapy targeting WNT-1 Inducible Signaling Protein-1("WISP1") for the treatment of Idiopathic Pulmonary Fibrosis ("IPF"). WISP1 is a protein that has been shown to be upregulated in IPF, linked to key growth factors, cellular proliferation, hyperplasia and is correlated with late stage cancers. IPF is a fatal disease which results in progressive loss of lung function due to fibrosis of the lungs. The project period for the Phase I WISP1 Grant Award covered a one-year period which commenced in August 2014, with total funds available of approximately $225 thousand. During the years ended December 31, 2016 and 2015, the Company recorded $51 thousand and $156 thousand of revenue associated with the Phase I WISP1 Grant Award, respectively.

Binding Term Sheet Regarding Acquisition of Semnur Pharmaceuticals, Inc.

On August 15, 2016, the Company, Scintilla Pharmaceuticals, Inc. (“Scintilla”) and Semnur Pharmaceuticals, Inc. (“Semnur”) entered into a binding term sheet (the “Semnur Binding Term Sheet”) setting forth the terms and conditions by which Scintilla will, through a subsidiary, purchase all of the issued and outstanding equity of Semnur (the “Semnur Acquisition”). The Semnur Binding Term Sheet provides that, contingent upon the execution of a definitive agreement between the parties (the “Definitive Agreement”) and subject to certain conditions, Scintilla will, at the closing of the Semnur Acquisition (the “Semnur Closing”), make an initial payment of $60.0 million (the “Initial Consideration”) to the equityholders of Semnur in exchange for all of the issued and outstanding equity of Semnur. The Initial Consideration will consist of $40.0 million in cash and $20.0 million in shares of the Company’s common stock (the “Semnur Stock Consideration”). The Semnur Binding Term Sheet also provides that the number of shares of the Company’s common stock comprising the Semnur Stock Consideration will be calculated based on the volume weighted average closing price of the Company’s common stock for the 30 consecutive trading days ending on the date that is three days prior to the execution of the Definitive Agreement. $6.0 million of the Semnur Stock Consideration will be placed into escrow, a portion of which will be held for a period of up to six or 12 months to secure certain obligations of Semnur and its equityholders in connection with the Semnur Acquisition. At the Semnur Closing, the Company will enter into a registration rights agreement with certain of Semnur’s equityholders, pursuant to which the Company will agree to seek the registration for resale of the shares of the Company’s common stock comprising the Semnur Stock Consideration.

In addition to the Initial Consideration, Scintilla may pay additional consideration of up to $140.0 million to Semnur’s equityholders upon Scintilla’s completion of certain clinical studies and trials, receipt of certain regulatory approvals and the achievement of certain sales targets following the Semnur Closing.

Under the Semnur Binding Term Sheet, either party may terminate the Semnur Binding Term Sheet (a “Termination”).

As of December 31, 2016, the Semnur Acquisition had not closed. The final terms of the Semnur Acquisition are subject to the negotiation and finalization of the Definitive Agreement and any other agreements relating to the Semnur Acquisition, and the material terms of the Semnur Acquisition are expected to differ from those set forth in the Semnur Binding Term Sheet. In addition, the Semnur Closing will be subject to various customary and other closing conditions.

A member of the Company’s board of directors is Semnur’s Chief Executive Officer and a member of its Board of Directors and currently owns approximately 5.5% of Semnur’s total outstanding capital stock.

Binding Term Sheet Regarding Acquisition of Virttu Biologics Limited

On November 15, 2016, the Company, TNK and Virttu Biologics Limited (“Virttu”) entered into a binding term sheet (the “Virttu Binding Term Sheet”) setting forth the terms and conditions by which TNK will purchase all of the issued and outstanding equity of Virttu (the “Virttu Acquisition”). Subject to certain conditions, at the closing of the Virttu Acquisition (the “Virttu Closing”), the Company will issue to the equityholders of Virttu an aggregate of $5.0 million of shares of the Company’s common stock (the “Closing Shares”). The number of Closing Shares issuable shall be determined based on the closing price of the Company’s common stock on the date of the Virttu Closing. Further, upon the occurrence of the closing of the next third party equity financing of TNK in which TNK receives at least $50.0 million in proceeds (a “Financing”), TNK will issue to the equityholders of Virttu an aggregate of $20.0 million of shares of the same class and series of capital stock of TNK as is issued in such Financing, based upon the valuation of TNK achieved in such Financing (the “TNK Financing Shares”). If a Financing has not occurred within twelve months of the Virttu Closing (the “Financing Due Date”), the equityholders of Virttu will be issued an aggregate of $20.0 million of shares of the Company’s common stock in lieu of the TNK Financing Shares (the “Sorrento Financing

Shares"). The number of Sorrento Financing Shares issuable shall be determined based on the closing price of the Company's common stock on the Financing Due Date. In the event that the TNK Financing Shares are issued, 20% of the TNK Financing Shares will be placed into escrow until the Financing Due Date to secure the indemnification obligations of Virttu and its equityholders for breaches of their representations, warranties or covenants under the definitive agreements governing the Virttu Acquisition. The Closing Shares and the TNK Financing Shares or the Sorrento Financing Shares will be issued to the Virttu equityholders on a pro rata basis based on each such equityholder's equity interest in Virttu as of the Virttu Closing.

As of December 31, 2016, the Virttu Acquisition had not closed. The final terms of the Virttu Acquisition are subject to the negotiation and finalization of the definitive agreements relating to the Virttu Acquisition and the material terms of the Virttu Acquisition may differ from those set forth in the Virttu Binding Term Sheet. In addition, the Virttu Closing will be subject to various customary and other closing conditions.

12. Loan and Security Agreement

In September 2013, the Company entered into a $5.0 million loan and security agreement with two banks pursuant to which: (i) the lenders provided the Company a term loan which was funded at closing, (ii) the Company repaid its then outstanding equipment loan balance of $762, and (iii) the lenders received a warrant to purchase an aggregate 31,250 shares of the Company's common stock at an exercise price of $8.00 per share exercisable for seven years from the date of issuance. The value of the warrants, totaling $215 thousand, was recorded as debt discount and additional paid-in capital.

In March 2014, the Company entered into an amended and restated loan and security agreement, increasing the September 2013 facility to $12.5 million from $5.0 million, with the same two banks. Such loan was funded at closing and was secured by a lien covering substantially all of the Company's assets, excluding intellectual property, which is subject to a negative pledge. In October 2014, the Company entered into a second amendment to its amended and restated loan and security agreement to extend the interest only payments on the outstanding amount of the loan from October 1, 2014 to May 1, 2015, after which equal monthly payments of principal and interest are due until the loan maturity date of September 30, 2017. The amended and restated loan interest rate is 7.95% per annum, and the Lenders received additional warrants to purchase an aggregate of 34,642 shares of the Company's common stock at an exercise price of $12.99 per share, exercisable for seven years from the date of issuance. The value of the warrants, totaling $322, was recorded as debt discount and additional paid-in capital.

On the November 22, 2016, the Company paid off all obligations owing under, and terminated, the amended and restated loan and security agreement, as amended (the "Terminated Loan Agreement"). In connection with the repayment and discharge of indebtedness, the Company was required to pay pre-payment fees of approximately $49 thousand, as required by the terms of the Terminated Loan Agreement. The secured interests under the Terminated Loan Agreement were terminated in connection with the Company's discharge of indebtedness.

On November 23, 2016, the Company and certain of its domestic subsidiaries (together with the Company, the "Borrowers") entered into a Loan and Security Agreement (the "Loan Agreement") with Hercules Capital, Inc. ("Hercules"), as a lender and agent for several banks and other financial institutions or entities from time to time party to the Loan Agreement (collectively, the "Lenders") for a term loan of up to $75.0 million, subject to funding in multiple tranches (the "Term Loan"). The proceeds of the Term Loan will be used for general corporate purposes and coincided with the repayment of the outstanding debt financing arrangement with Oxford Finance LLC and Silicon Valley Bank.

The first tranche of $50.0 million was funded upon execution of the Loan Agreement on November 23, 2016. Under the terms of the Loan Agreement, the Borrowers may, but are not obligated to, request to draw on two additional tranches. The second tranche of up to $10.0 million is available until September 30, 2017, subject to the Borrowers achieving certain fundraising and corporate milestones and satisfying customary conditions. The third tranche of up to $15.0 million is available until June 30, 2018, subject to approval by Hercules' Investment Committee. The Term Loan will mature on December 1, 2020.

The Loan Agreement contains customary affirmative and restrictive covenants and representations and warranties, including financial reporting obligations and limitations on dividends, indebtedness, liens (including a negative pledge on intellectual property and other assets), collateral, investments, distributions, transfers, mergers or acquisitions, taxes, corporate changes, deposit accounts, and subsidiaries. Additionally, the Loan Agreement contains covenants requiring the Borrowers (i) to achieve certain fundraising requirements by certain dates and (ii) to maintain a minimum amount of unrestricted cash prior to achieving its corporate and fundraising milestones. The breach of such covenants, in addition to certain other covenants, would result in the occurrence of an event of default. The Loan

Agreement also contains other customary provisions, such as expense reimbursement, non-disclosure obligations, as well as indemnification rights for the benefit of the Lenders. Upon the occurrence of an event of default and following any applicable cure periods, if any, a default interest rate of an additional 5.00% may be applied to the outstanding loan balances, and the Lenders may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement.

In connection with the Loan Agreement, the Company issued Hercules a warrant, dated November 23, 2016 (the "Warrant"), to purchase up to 460,123 shares of Common Stock, at an initial exercise price of $4.89, subject to adjustment as provided in the Warrant. The Warrant is initially exercisable for 306,748 shares of common stock of the Company, and may automatically become exercisable for additional shares of common stock on such dates (if any) based upon the funding amounts of Tranche II or Tranche III of the Term Loan that may be extended to the Borrowers. The Warrant will terminate, if not earlier exercised, on the earlier of November 23, 2023 and the closing of certain merger or other transactions in which the consideration is cash, stock of a publicly-traded acquirer or a combination thereof.

Long-term debt and unamortized discount balances are as follows (in thousands):

Face value of loan	$50,000
Fair value of warrant	(1,377)
Capitalized debt issuance costs	(1,619)
Accretion of debt issuance costs and other	69
Accretion of debt discount	34
Balance at December 31, 2016	$47,107

Future minimum payments under the loan and security agreement are as follows (in thousands):

Year Ending December 31,	
2017	4,914
2018	13,675
2019	22,548
2020	25,411
Total future minimum payments	66,548
Unamortized interest	(16,445)
Debt discount	(1,377)
Capitalized debt issuance costs	(1,619)
Total minimum payment	47,107
Current portion	—
Long-term debt	$47,107

The Company, the Borrowers and the Lenders entered into an amendment to the Loan Agreement in March 2017. See Note 20 for additional details.

13. Stockholders' Equity

The Company recorded $4.7 million, $7.0 million, and $3.9 million of compensation expense related to equity awards for the years ended December, 31, 2016, 2015, and 2014, respectively.

Stock Incentive Plans

2009 Non-Employee Director Grants

In September 2009, prior to the adoption of the 2009 Stock Incentive Plan (the "2009 Plan"), the Company's board of directors approved the reservation and issuance of 8,000 nonstatutory stock options to the Company's non-employee directors. The outstanding options vested on the one year anniversary of the vesting commencement date in October

2010, and are exercisable for up to 10 years from the grant date. No further shares may be granted under this plan and, as of December 31, 2016, 3,200 options with a weighted-average exercise price of $1.12 were outstanding.

2009 Stock Incentive Plan

In October 2009, the Company's stockholders approved the 2009 Plan. In May 2016, the Company's stockholders approved, among other items, the amendment and restatement of the 2009 Plan to increase the number of common stock authorized to be issued pursuant to the Stock Plan to 6,260,000. Such shares of the Company's common stock are reserved for issuance to employees, non-employee directors and consultants of the Company. The 2009 Plan provides for the grant of incentive stock options, non-incentive stock options, stock appreciation rights, restricted stock awards, unrestricted stock awards, restricted stock unit awards and performance awards to eligible recipients. Recipients of stock options shall be 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 options granted under the Stock Plan is ten years. There are various vesting schedules; however, employee option grants generally vest 25% on the first anniversary of the original vesting commencement date, with the balance vesting monthly over the remaining three years. The vesting schedules for grants to non-employee directors and consultants will be determined by the Company's Compensation Committee. Stock options are generally not exercisable prior to the applicable vesting date, unless otherwise accelerated under the terms of the applicable stock plan agreement.

The following table summarizes stock option activity as of December 31, 2016, 2015 and 2014, and the changes for the years then ended (in thousands, except for share amounts):

	Options Outstanding	Weighted-Average Exercise Price	Aggregate Intrinsic Value
Outstanding at December 31, 2013	1,044,100	$ 6.52	$ 1,860
Options Granted	1,577,000	$ 3.38	
Options Canceled	(325,300)	$ 11.38	
Options Exercised	(64,000)	$ 4.76	
Outstanding at December 31, 2014	2,231,800	$ 6.34	$ 8,323
Options Granted	1,378,600	$ 12.03	
Options Canceled	(376,072)	$ 6.84	
Options Exercised	(276,712)	$ 6.14	
Outstanding at December 31, 2015	2,957,616	$ 8.95	$ 4,506
Options Granted	2,034,050	$ 6.34	
Options Canceled	(544,098)	$ 8.77	
Options Exercised	(114,692)	$ 4.71	
Outstanding at December 31, 2016	4,332,876	$ 7.86	$ 427

The aggregate intrinsic value of options exercised during the years ended December 31, 2016, 2015 and 2014 were $194 thousand, $2,411 thousand and $230 thousand, respectively. The Company uses the Black-Scholes valuation model to calculate the fair value of stock options. The fair value of employee stock options was estimated at the grant date using the following assumptions:

	Years Ended December 31,		
	2016	2015	2014
Weighted-average grant date fair value	$5.86	$12.03	$3.38
Dividend yield	—	—	—
Volatility	75%	75%	76%
Risk-free interest rate	1.49%	1.67%	1.87%
Expected life of options	6.1 years	6.1 years	6.1 years

The assumed dividend yield was based on the Company's expectation of not paying dividends in the foreseeable future. Due to the Company's limited historical data, the estimated volatility incorporates the historical and implied volatility 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.

The total employee and director stock-based compensation recorded as operating expenses was $4,354 thousand, $5,198 thousand and $2,796 thousand for the years ended December 31, 2016, 2015 and 2014, respectively.

The total unrecognized compensation cost related to unvested employee and director stock option grants as of December 31, 2016 was $10,192 thousand and the weighted average period over which these grants are expected to vest is 2.6 years.

The Company records equity instruments issued to non-employees as expense at their fair value over the related service period as determined in accordance with the authoritative guidance and periodically revalues the equity instruments as they vest. Stock-based compensation expense related to non-employee consultants recorded as operating expenses was $198 thousand, $1,481 thousand, and $678 thousand for the years ended December 31, 2016, 2015 and 2014, respectively.

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance consists of the following at December 31, 2016:

Common stock warrants outstanding under the underwriters agreement	182,600
Common stock warrants outstanding under the loan and security agreement	65,892
Common stock warrants outstanding under the Cambridge securities agreement	1,224,138
Common stock warrants outstanding under the Hercules securities agreement	306,748
Common stock warrants outstanding under private placements	4,153,620
Common stock options outstanding under the Non-Employee Director Plan	3,200
Authorized for future grant or issuance under the 2009 Stock Incentive Plan	1,414,226
Issuable under BDL acquisition agreement	309,916
Issuable under assignment agreement based upon achievement of certain milestones	80,000
	7,740,340

2015 Stock Option Plans

In May 2015, the Company's subsidiary, TNK, adopted the TNK 2015 Stock Option Plan and reserved 10.0 million shares of TNK class A common stock and awarded 3.6 million options to certain Company personnel, directors and consultants under such plan. In November 2015, TNK awarded 0.5 million options to certain Company personnel. Stock options granted under this plan typically vest a portion immediately upon grant and the remaining options over two to four years or monthly over four years from the grant date and have a contractual term of ten years. As of December 31, 2016, 3.0 million options were outstanding.

In May 2015, TNK granted a warrant to the Company's CEO to purchase 9.5 million shares of TNK class B common stock which have 10 to 1 voting rights. Warrant shares totaling 4.0 million are exercisable evenly over forty months and the remaining warrant shares are exercisable if certain defined events occur within four years from date of issuance at an initial exercise price of $0.01 per share. The exercise price of the warrant is subject to customary adjustment provisions for stock splits, stock dividends, recapitalizations and the like.

In May 2015, the Company's subsidiary, LA Cell, adopted the LA Cell 2015 Stock Option Plan and reserved 10.0 million shares of LA Cell class A common stock and awarded 2.9 million options to certain Company personnel, directors and consultants under such plan. Stock options granted under this plan typically vest a portion immediately upon grant and the remaining options over two to four years or monthly over four years from the grant date and have a contractual term of ten years. As of December 31, 2016, 2.1 million options were outstanding.

In May 2015, LA Cell granted a warrant to the Company's CEO to purchase 9.5 million shares of LA Cell class B common stock which have 10 to 1 voting rights. Warrant shares totaling 4.0 million are exercisable evenly over forty months and the remaining warrant shares are exercisable if certain defined events occur within four years from date of issuance at an initial exercise price of $0.01 per share. The exercise price of the warrant is subject to customary adjustment provisions for stock splits, stock dividends, recapitalizations and the like.

In October 2015, the Company's subsidiary, Concortis Biosystems, Corp., ("CBC"), adopted the CBC 2015 Stock Option Plan and reserved 10.0 million shares of CBC class A common stock and awarded 1.8 million options to certain Company personnel, directors and consultants under such plan. Stock options granted under this plan typically vest a portion immediately upon grant and the remaining options over two to four years or monthly over four years from the

grant date and have a contractual term of ten years. As of December 31, 2016, 1.8 million options were outstanding.

In October 2015, CBC granted a warrant to the Company's CEO to purchase 9.5 million shares of CBC class B common stock which have 10 to 1 voting rights. Warrant shares totaling 4.0 million are exercisable evenly over forty months and the remaining warrant shares are exercisable if certain defined events occur within four years from date of issuance at an initial exercise price of $0.25 per share. The exercise price of the warrant is subject to customary adjustment provisions for stock splits, stock dividends, recapitalizations and the like.

In October 2015, the Company's subsidiary, Scintilla, adopted the Scintilla 2015 Stock Option Plan and reserved 10.0 million shares of Scintilla class A common stock and awarded 2.1 million options to certain Company personnel, directors and consultants under such plan. Stock options granted under this plan typically vest a portion immediately upon grant and the remaining options over two to four years or monthly over four years from the grant date and have a contractual term of ten years. As of December 31, 2016, 1.0 million options were outstanding.

In October 2015, Scintilla granted a warrant to the Company's CEO to purchase 9.5 million shares of Scintilla class B common stock which have 10 to 1 voting rights. Warrant shares totaling 4.0 million are exercisable evenly over forty months and the remaining warrant shares are exercisable if certain defined events occur within four years from date of issuance at an initial exercise price of $0.01 per share. The exercise price of the warrant is subject to customary adjustment provisions for stock splits, stock dividends, recapitalizations and the like.

In October 2015, the Company's subsidiary, Sorrento Biologics, Inc. ("Biologics"), adopted the Biologics 2015 Stock Option Plan and reserved 10.0 million shares of Biologics class A common stock and awarded 2.6 million options to certain Company personnel, directors and consultants under such plan. Stock options granted under this plan typically vest a portion immediately upon grant and the remaining options over two to four years or monthly over four years from the grant date and have a contractual term of ten years. As of December 31, 2016, 1.4 million options were outstanding.

In October 2015, Biologics granted a warrant to the Company's CEO to purchase 9.5 million shares of Biologics class B common stock which have 10 to 1 voting rights. Warrant shares totaling 4.0 million are exercisable evenly over forty months and the remaining warrant shares are exercisable if certain defined events occur within four years from date of issuance at an initial exercise price of $0.01 per share. The exercise price of the warrant is subject to customary adjustment provisions for stock splits, stock dividends, recapitalizations and the like.

The total director stock-based compensation recorded as operating expenses by the Company for TNK, LA Cell, CBC, Scintilla and Biologics for the year ended December 31, 2016 and 2015 was $166 thousand and $140 thousand, respectively. Total unrecognized stock-based compensation expense related to unvested director stock option and warrant grants for these entities as of December 31, 2016 was $367 thousand, and the weighted-average period over which these grants are expected to vest is approximately 3.5 years. The Company records equity instruments issued to non-employees as expense at their fair value over the related service period as determined in accordance with the authoritative guidance and periodically revalues the equity instruments as they vest. Stock based compensation expense related to non-employee consultants recorded as operating expenses by the Company for TNK, LA Cell, CBC, Scintilla and Biologics for the year ended December 31, 2016 and 2015 was $189 thousand and $97 thousand, respectively.

The weighted-average assumptions used in the Black-Scholes option and warrant pricing model used by TNK, LA Cell, CBC, Scintilla and Biologics to determine the fair value of stock option grants for directors and non-employee consultants were as follows: expected dividend yield – 0%, risk-free interest rate – 1.39% to 2.24%, expected volatility – 76% to 77%, and expected term of 4.0 to 6.1 years.

2014 Stock Option Plan

In May 2014, the Company's subsidiary, Ark Animal Health, Inc. ("Ark"), adopted the Ark 2014 Stock Option Plan and reserved and awarded 600,000 options to certain directors and consultants under such plan. Stock options granted under such plan typically vest a portion immediately upon grant and the remaining options over one year from the grant date and will have a contractual term of ten years. As of December 31, 2016, 322,000 options were outstanding.

The total director and consultant stock-based compensation recorded as operating expenses by the Company for Ark for the years ended December 31, 2016 and 2015 was $0 and $56 thousand, respectively. No unrecognized stock-based compensation expense related to unvested stock option grants existed as of December 31, 2016.

The weighted-average assumptions used in the Black-Scholes option pricing model used by Ark to determine the fair value of stock option grants for the year ended December 31, 2015 were: expected dividend yield – 0%, risk-free interest rate – 1.94% to 2.27%, expected volatility – 75% to 78%, and expected term of 6.08 to 10 years, and for the year

ended December 31, 2014 were: expected dividend yield – 0%, risk-free interest rate – 1.94% to 2.60%, expected volatility – 75% to 78%, and expected term of 6.08 to 10 years.

14. Derivative Liability

On October 13, 2015, the Company wrote a call option to Cambridge, on up to 2.0 million shares of NantKwest common stock held by the Company (the "Option Agreement"). As of December 31, 2015, the Company held approximately 5.6 million shares of common stock of NantKwest, par value $.0001 per share, which was classified as available-for-sale and reported in its consolidated financial statements as marketable securities. The Option Agreement gave Cambridge the right to purchase up to 2.0 million shares at a price of $15.295 per share from time to time in the first quarter of 2016. There was no contractual option premium associated with this Option Agreement. The Option Agreement was a derivative as defined in ASC Topic 815 and was recognized at fair value every reporting period the Option Agreement is in effect, with changes in fair value recognized in current operations. For the year ended

December 31, 2015, the Company recorded a loss of $3.4 million on the derivative liability. As of December 31, 2015, a derivative liability of $5.5 million was recorded on the Company's consolidated balance sheets. The fair value of the Company's derivative liability at December 31, 2015 was a Level 3 measurement.

The call option expired unexercised on March 31, 2016 and the Company recorded a gain of $5.5 million upon the cancellation of the derivative liability.

As of December 31, 2016, no derivative liability was recorded on the Company's consolidated balance sheets.

15. Commitments and Contingencies

Litigation

In the normal course of business, the Company may be named as a defendant in one or more lawsuits. The Company is not a party to any outstanding material litigation and management is currently not aware of any legal proceedings that, individually or in the aggregate, are deemed to be material to the Company's financial condition or results of operations.

On April 25, 2016, Wildcat Liquid Alpha, LLC ("WLA") filed a complaint in the Court of Chancery of the State of Delaware seeking an order compelling the Company to provide WLA with certain documents, books and records for inspection and copying pursuant to an April 11, 2016 demand made by WLA (the "Inspection Demand Action"). As of December 31, 2016, the Company was unable to determine whether any loss would occur with respect to the Inspection Demand Action or to estimate the range of such potential loss; therefore, no amount of loss was accrued by the Company in the financial statements for the year ended December 31, 2016.

On May 13, 2016, WLA filed a derivative action in the Court of Chancery of the State of Delaware (the "WLA Action" and, together with the Inspection Demand Action, the "Actions") against each of the members of the Board at the time, Henry Ji, William S. Marth, Kim D. Janda, Jaisim Shah, David H. Deming, and Douglas Ebersole (the "Prior Board") and against the Company as nominal defendant. After the members of the Prior Board and the Company moved to dismiss, on August 12, 2016, WLA filed an amended complaint containing both direct and derivative claims against each of the members of the Prior Board and against the Company as nominal defendant, alleging, among other things: (1) breach of fiduciary duty with respect to the formation of, and certain options and warrants issued by, certain of the Company's subsidiaries to Dr. Ji and members of the Prior Board (the "Subsidiary Options Claim"); (2) breach of fiduciary duty with respect to the Company's prior announcement that it had entered into a voting agreement with Yuhan Corporation ("Yuhan") in connection with a transaction through which it purchased $10 million of shares of the Company's common stock and warrants (the "Yuhan Agreement Claim"); (3) waste of corporate assets regarding the foregoing; (4) unjust enrichment regarding the foregoing; and (5) violation of 8 Del. C. § 160 based on the Yuhan voting agreement. The Company believes that the WLA Action is without merit, and will vigorously defend itself against the action. As of December 31, 2016, the Company was unable to determine whether any loss would occur with respect to the WLA Action or to estimate the range of such potential loss; therefore, no amount of loss was accrued by the Company in the financial statements for the year ended December 31, 2016.

On March 17, 2017, the Company, the members of the Prior Board and WLA entered into a confidential settlement agreement and release (the "Settlement Agreement") pursuant to which, among other things, each party agreed to forever release and not to sue the other party with respect to the claims asserted in the Actions and WLA agreed to

dismiss the Actions within ten business days following the execution of the Settlement Agreement. See Note 20 for additional details.

On September 8, 2016, Yvonne Williams filed an action both derivatively and on behalf of a purported class of stockholders in the Court of Chancery of the State of Delaware against each of the members of the Prior Board; George Ng, the Company's Executive Vice President, Chief Administrative Officer, and Chief Legal Officer; Jeffrey Su, the Company's Executive Vice President & Chief Operating Officer; and the Company as nominal defendant, alleging: (1) breach of fiduciary duty with respect to the Subsidiary Options Claim; and (2) breach of fiduciary duty with respect to the Yuhan Agreement Claim (the "Williams Action"). The Company believes that the Williams Action is without merit, and will vigorously defend itself against the action. The Company is unable to determine whether any loss will occur with respect to the Williams Action or to estimate the range of such potential loss; therefore, no amount of loss has been accrued by the Company as of the date of filing of this Form 10-K. Furthermore, there is no guarantee that the Company will prevail in this suit or receive any damages or other relief if it does prevail.

On June 26, 2015, Immunomedics, Inc. ("Immunomedics") filed a complaint in the United States District Court for the District of New Jersey (the "Immunomedics Action") against the Board of Directors of Roger Williams Medical Center, Dr. Richard P. Junghans, Dr. Steven C. Katz, the Office of the Board of Advisors of Tufts University School of Medicine, and one or more individuals or entities to be identified later. This complaint (the "Initial Complaint") alleged, among other things: (1) breach of

contract; (2) breach of covenant of good faith and fair dealing; (3) tortious interference with prospective economic gain; (4) tortious interference with contracts; (5) misappropriation; (6) conversion; (7) bailment; (8) negligence; (9) vicarious liability; and (10) patent infringement. Overall, the allegations in the Initial Complaint were generally directed to an alleged material transfer agreement dated December 2008 and Immunomedics' alleged request for the return of certain alleged research material, as well as the alleged improper use and conversion of such research materials outside the scope of the material transfer agreement.

On October 22, 2015, Immunomedics filed an amended complaint (the "First Amended Complaint"), which, among other things, no longer named the Board of Directors of Roger Williams Medical Center and The Office of the Board of Advisors of Tufts University School of Medicine as defendants. Roger Williams Medical Center and Tufts Medical Center were added as new defendants. On January 14, 2016, Immunomedics filed a second amended complaint (the "Second Amended Complaint"), which, among other things, no longer named Tufts Medical Center as a defendant. In addition, the Second Amended Complaint contained allegations directed to two additional alleged material transfer agreements dated September 1993 and May 2010, respectively, and also added an allegation of unjust enrichment. The Second Amended Complaint also no longer asserted claims for (1) breach of covenant of good faith and fair dealing; (2) misappropriation; (3) bailment; (4) negligence; and (5) vicarious liability.

On October 12, 2016, Immunomedics filed a third amended complaint (the "Third Amended Complaint"), which added the Company, TNK, BDL and CARgenix as defendants. TNK is a subsidiary of the Company and purchased BDL and CARgenix in August 2015. The Third Amended Complaint includes, among other things, allegations against the Company, TNK, BDL and CARgenix regarding (1) conversion; (2) tortious interference; and (3) unjust enrichment. On December 2, 2016, the Company, TNK, BDL, and CARgenix filed a motion to dismiss Immunomedics's complaint against them for lack of personal jurisdiction. On January 25, 2017, the District of New Jersey granted this motion, and the Company, TNK, BDL and CARgenix were dismissed as defendants from the case. The Immunomedics Action remains pending in the District of New Jersey against defendants Roger Williams Medical Center, Dr. Junghans, and Dr. Katz. A trial date has not yet been set. The Company believes that the Immunomedics Action is without merit, and will vigorously defend itself against this and any further actions. However, should Immunomedics prevail against the Company, Roger Williams Medical Center or other defendants, certain patent rights optioned, owned and/or licensed by the Company could be at risk of invalidity or enforceability, or the litigation could otherwise adversely impact the Company's ownership or other rights in certain intellectual property. At this point in time, the Company is unable to determine whether any loss will occur with respect to the Immunomedics Action or to estimate the range of such potential loss; therefore, no amount of loss has been accrued by the Company as of the date of filing of this Form 10-K.

Operating Leases

The Company currently leases in San Diego, California approximately 43,000 square feet of corporate office and laboratory space, approximately 6,350 square feet of laboratory and office space at a second location and approximately 1,405 square feet of office space at a third location. The Company also previously leased approximately 1,800 square feet of office space in Cary, North Carolina, under a lease which expired in March 2016 and was not renewed. The Company's lease agreements in San Diego, as amended, for its corporate office and laboratory space, its second laboratory and office space and its third office space, expire in December 2026, November 2025 and September 2020, respectively. The Company also leases 25,381 square feet of office and laboratory space in Suzhou, China, which lease expires in June 2018.

Additionally, the Company will enter into a new lease in San Diego, California for approximately 76,700 square feet of additional corporate office and laboratory space as well as approximately 36,400 square feet for offices, facilities for cGMP fill and finish and storage space at a new location beginning in 2017.

For all leased properties the Company has provided a total security deposit of $1,482 thousand to secure its obligations under the various leases, which has been included in prepaid and other assets.

Minimum future non-cancelable annual operating lease obligations are as follows for the years ending December 31 (in thousands):

2017	$4,763
2018	4,944
2019	4,795
2020	4,909
2021	4,996
Thereafter	22,553
	$46,960

Rental expense paid for the years ended December 31, 2016, 2015 and 2014 under the above leases totaled $2,054 thousand, $1,630 thousand and $513 thousand, respectively.

16. Income Taxes

The components of the provision expense (benefit) were as follows for the years ended December 31, 2016, 2015 and 2014 (in thousands):

	2016	2015	2014
Current:			
Federal	$(1,785)	$2,500	$—
State	(600)	621	—
	(2,385)	3,121	—
Deferred:			
Federal	3,554	32,378	(1,324)
State	(2,065)	815	(378)
Totals	$(896)	$36,314	$(1,702)

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

The components of the Company’s net deferred tax liabilities and related valuation allowance are as follows as of December 31, 2016 and 2015 (in thousands):

	2016	2015
Deferred tax assets:		
Amortization of intangibles	$32,032	$12,130
Deferred revenue	44,754	39,594
Derivative liability	—	1,267
Tax credit carryforwards	5,693	2,737
Net operating loss carryforwards and credits	6,237	1,247
Stock based compensation	3,898	2,493
Accrued expenses and other	1,558	636
Total deferred tax assets	94,172	60,104
Less valuation allowance	(81,039)	(39,605)
Total deferred tax assets	13,133	20,499
Deferred tax liabilities:		
Amortization of intangibles	(25,433)	—
Depreciation	(1,530)	(900)
Investment in common stock	(39,408)	(35,995)

Marketable securities	—	(32,945)
Other	—	—
Net deferred tax liabilities	$(53,238)	$(49,341)

The reconciliation between U.S. federal income taxes at the statutory rate and the Company's provision for income taxes are as follows for the years ended December 31 (in thousands):

	2016	2015
Income tax expense (benefit) at federal statutory rate	$(23,357)	(4,740)
State, net of federal tax benefit	(1,522)	$(367)
Other permanent differences	2,882	34
Incentive stock compensation	767	708
IgDraSol transaction	—	2,055
Other	120	(71)
Return to provision adjustment	(16)	—
Acquired in-process research and development	(2,360)	2,263
Change in State rate	(172)	(62)
Research tax credits	(2,318)	(3,141)
Uncertain tax positions	(1,836)	1,836
Prior year true-ups and carrybacks	4,133	—
Change in valuation allowance	22,783	37,799
Income tax provision	$(896)	$36,314

The Company has evaluated the available evidence supporting the realization of its gross deferred tax assets, including the amount and timing of future taxable income, and has determined that it is more likely than not that the deferred tax assets will not be realized. Due to such uncertainties surrounding the realization of the domestic deferred tax assets, the Company maintains a valuation allowance of $81,039 thousand against its deferred tax assets as of December 31, 2016. Realization of the deferred tax assets will be primarily dependent upon the Company's ability to generate sufficient taxable income prior to the expiration of its net operating losses.

As of December 31, 2016, the Company had net operating loss carryforward of approximately $13.2 million and $39.2 million for federal and state income tax purposes, respectively. These may be used to offset future taxable income and will begin to expire in varying amounts in 2034 for federal income tax purposes and 2029 to 2036 for state income tax purposes. The Company also has research and development credits of approximately $4.5 million and $2.8 million for federal and state income taxes purposes, respectively. The federal credits may be used to offset future taxable income and will begin to expire in varying amounts in 2029 to 2036. The state credits may be used to offset future taxable income, such credits carryforward indefinitely.

The Company is subject to taxation in the U.S. and California jurisdictions and potentially, foreign jurisdictions outside the U.S., in conjunction with its transactions and activities. Currently, no historical years are under examination. The Company's tax years starting in December 31, 2007 through December 31, 2016 are open and subject to examination by the U.S. and state taxing authorities due to the carryforward of utilized net operating losses and research and development credits.

The Company adopted the provisions of ASC Topic 740 regarding uncertain tax positions on January 1, 2009. Under ASC Topic 740, the impact of an uncertain income tax position taken on a tax return must be recognized at the largest amount that is cumulatively "more likely than not" to be sustained upon audit by relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained.

A reconciliation of the beginning and ending amount of unrecognized tax expense (benefits) is as follows (in thousands):

	Amount
Unrecognized tax benefits balance at December 31, 2015	$ 1,836
Increase related to current year tax positions	444
Increase related to prior year tax positions	109
Settlements	—
Lapse in statute of limitations	—
Unrecognized tax benefits balance at December 31, 2016	$ 2,389

Included in the balance of unrecognized tax benefits at December 31, 2016, are $40 thousand that, if recognized, would affect the effective tax rate.

The Company's policy is to recognize interest and penalties related to income tax matters in income tax expense. No interest has been recognized as of and for the period ended December 31, 2016.

The Company believes that no material amount of the liabilities for uncertain tax positions will expire within 12 months of December 31, 2016.

17. Related Party Agreements and Other

During the year ended December 31, 2015, the Company entered into a joint venture called Immunotherapy NANTibody, LLC, with NantCell, a wholly-owned subsidiary of NantWorks. In July 2015, the Company contributed its portion of the initial joint funding of $40.0 million to the NANTibody joint venture. The Company and NantCell have also entered into a license agreement pursuant to which the Company received a $10.0 million upfront license payment and $100.0 million of vested NantCell common stock.

During the year ended December 31, 2015, the Company entered into a joint venture called NantCancerStemCell, LLC, with NantBioScience, a wholly-owned subsidiary of NantWorks. In connection with negotiated changes to the structure of NantStem the Company issued a call option on shares of NantKwest that it owned to Cambridge, a related party to the Company and to NantBioScience. In April 2015, the Company purchased 1.0 million shares of NantBioScience common stock for $10.0 million.

In June 2016, the Company agreed to accelerate and pay a $30.0 million milestone license payment which has been recognized as acquired in-process research and development expense as of September 30, 2016, in exchange for the purchase by Mabtech Limited and one or more of its affiliates in June 2016, of $20.0 million of Common Stock and warrants.

In March 2016, the Company and Yuhan entered into an agreement to form a joint venture company called ImmuneOncia Therapeutics, LLC, to develop and commercialize a number of immune checkpoint antibodies against undisclosed targets for both hematological malignancies and solid tumors. As of December 31, 2016, the carrying value of the Company's investment in ImmuneOncia Therapeutics, LLC was approximately $9.5 million. During the three months ended June 30, 2016, Yuhan purchased $10.0 million of Common Stock and warrants.

In June 2016, the Company and TNK entered into a joint venture agreement with 3SBio to develop and commercialize proprietary immunotherapies, including those developed from, including or using TNK's CAR-T technology targeting CEA positive cancers. In June 2016, 3SBio purchased $10.0 million of Common Stock and warrants.

In May 2015, the Company entered into a stock sale and purchase agreement with NantPharma, a private company owned by NantWorks pursuant to which the Company sold its equity interests in IgDraSol, its wholly-owned subsidiary and holder of the rights to Cynviloq for an upfront payment of $90.05 million and potential regulatory and sales milestones of up to $1.2 billion.

In December 2014, the Company entered into a securities purchase agreement (the "Purchase Agreement") with Cambridge Equities, an affiliated entity of Dr. Patrick Soon-Shiong (the "Investor") pursuant to which the Company agreed to issue and sell to the Investor an aggregate of approximately 7.2 million shares of the Company's common stock at a price of $5.80 per share for an aggregate purchase price of $41.7 million. In connection with the Purchase Agreement, the Investor received a warrant to purchase approximately 1.7 million shares of the Company's common stock. The warrant is exercisable for a period of three years from the date of issuance at an initial exercise price of

$5.80 per share.

In December 2014, the Company entered into a joint development and license agreement with Conkwest Inc., which has changed its name to NantKwest, Inc., and of which Dr. Patrick Soon-Shiong is a majority owner. In addition, the Company purchased approximately 5.6 million shares of NantKwest, Inc. common stock for $10.0 million.

18. 401(k) Plan

The Company maintains a defined contribution 401(k) plan available to eligible employees. Employee contributions are voluntary and are determined on an individual basis, limited to the maximum amount allowable under federal tax regulations. The Company made matching contributions to the 401(k) plan totaling $424 thousand, $237 thousand and $57 thousand, for the years ended December 31, 2016, 2015 and 2014, respectively.

19. Quarterly Financial Data (Unaudited)

The following table sets forth selected quarterly data for the years presented, in thousands, except per share data.

2016	Quarter Ended December 31,	Quarter Ended September 30,	Quarter Ended June 30,	Quarter Ended March 31,	Year Ended December 31,
Revenues	$4,019	$ 2,243	$902	$988	$8,152
Operating costs and expenses	$21,823	$ 14,491	$45,613	$23,002	$104,929
Net income (loss) attributable to Sorrento	$(17,859)	$ 15,891	$(43,305)	$(15,650)	$(60,923)
Net income (loss) per share - basic and diluted	$(0.30)	$ 0.24	$(0.93)	$(0.41)	$(1.21)
Weighted-average shares - basic	58,634	66,193	46,498	37,965	50,360
Weighted-average shares - diluted	58,634	66,527	46,498	37,965	50,360

2015	Quarter Ended December 31,	Quarter Ended September 30,	Quarter Ended June 30,	Quarter Ended March 31,	Year Ended December 31,
Revenues	$1,337	$ 1,103	$1,173	$977	$4,590
Operating costs and expenses	$18,997	$ 36,738	$11,706	$11,154	$78,595
Net loss attributable to Sorrento	$(26,599)	$ (2,079)	$(10,958)	$(10,438)	$(50,074)
Net loss per share - basic and diluted	$(0.62)	$ (0.03)	$(0.30)	$(0.29)	$(1.24)
Weighted-average shares	37,770	37,328	36,315	36,206	36,909

The quarters ended March 31, June 30, and September 2016 have been restated to correct the effects of an immaterial error in the interim periods related to the re-measurement of acquisition consideration payable.

As a result of the restatement, an adjustment of $2.7 million to gain on contingent liabilities has been reflected in operating costs and expenses in the above table for the three months ended March 31, 2016. As a result of the adjustment, operating costs and expenses decreased from $25.7 million to $23.0 million, net loss decreased from $18.4 million to $15.7 million, and net loss per share decreased from ($0.48) to ($0.41) for the quarter ended March 31, 2016. The adjustment includes the effects of a $991 thousand adjustment related to the prior year as discussed in footnote 3.

As a result of the restatement, an adjustment of $1.7 million to gain on contingent liabilities and $0.1 million of research and development expenses have been reflected in operating costs and expenses in the above table for the three months ended June 30, 2016. As a result of the adjustment, operating costs and expenses decreased from $47.3 million to $45.6 million, Net loss decreased from $44.9 million to $43.3 million, and net loss per share decreased from ($0.97) to ($0.93) for the quarter ended June 30, 2016.

As a result of the restatement, an adjustment of $1.7 million of a gain on contingent liabilities and $0.2 million of research and development expenses have been reflected in operating costs and expenses in the above table for the three months ended September 30, 2016. As a result of the adjustment, operating costs and expenses decreased from $16.0 million to $14.5 million, Net income increased from $14.4 million to $15.9 million, and net loss per share increased from $0.22 to $0.24 for the quarter ended September 30, 2016.

20. Subsequent Events

On March 15, 2017, the Company, the Borrowers and Hercules entered into an amendment to the Loan Agreement (the “Amendment”). The Amendment: (1) adjusted the minimum amount of unrestricted cash that the Company must maintain, (2) changed the date by which the Company must achieve a fundraising milestone, (3) modified the second and third tranches of additional funds available under the Term Loan such that $25.0 million is available until June 30, 2018, subject to approval by Hercules’ Investment Committee, and (4) amended the end of term charge.

On March 17, 2017, the Company, the members of the Prior Board and WLA entered into a confidential settlement agreement and release (the “Settlement Agreement”) pursuant to which, among other things, each party agreed to forever release and not to sue the other party with respect to the claims asserted in the Actions and WLA agreed to dismiss the Actions within ten business days following the execution of the Settlement Agreement. The Company also agreed (1) to terminate all options and warrants currently outstanding in Company subsidiaries that have been granted to Dr. Ji and any other director of the Company, (2) to grant WLA the right to designate a representative to attend all meetings of the Company’s board of directors in a nonvoting observer capacity, and (3) to act in good faith to attempt to add two additional independent directors to the Company’s board of directors. In addition, WLA agreed to comply with a two-year standstill period, during which WLA is prohibited from engaging in certain actions relating to controlling or influencing the management of the Company.